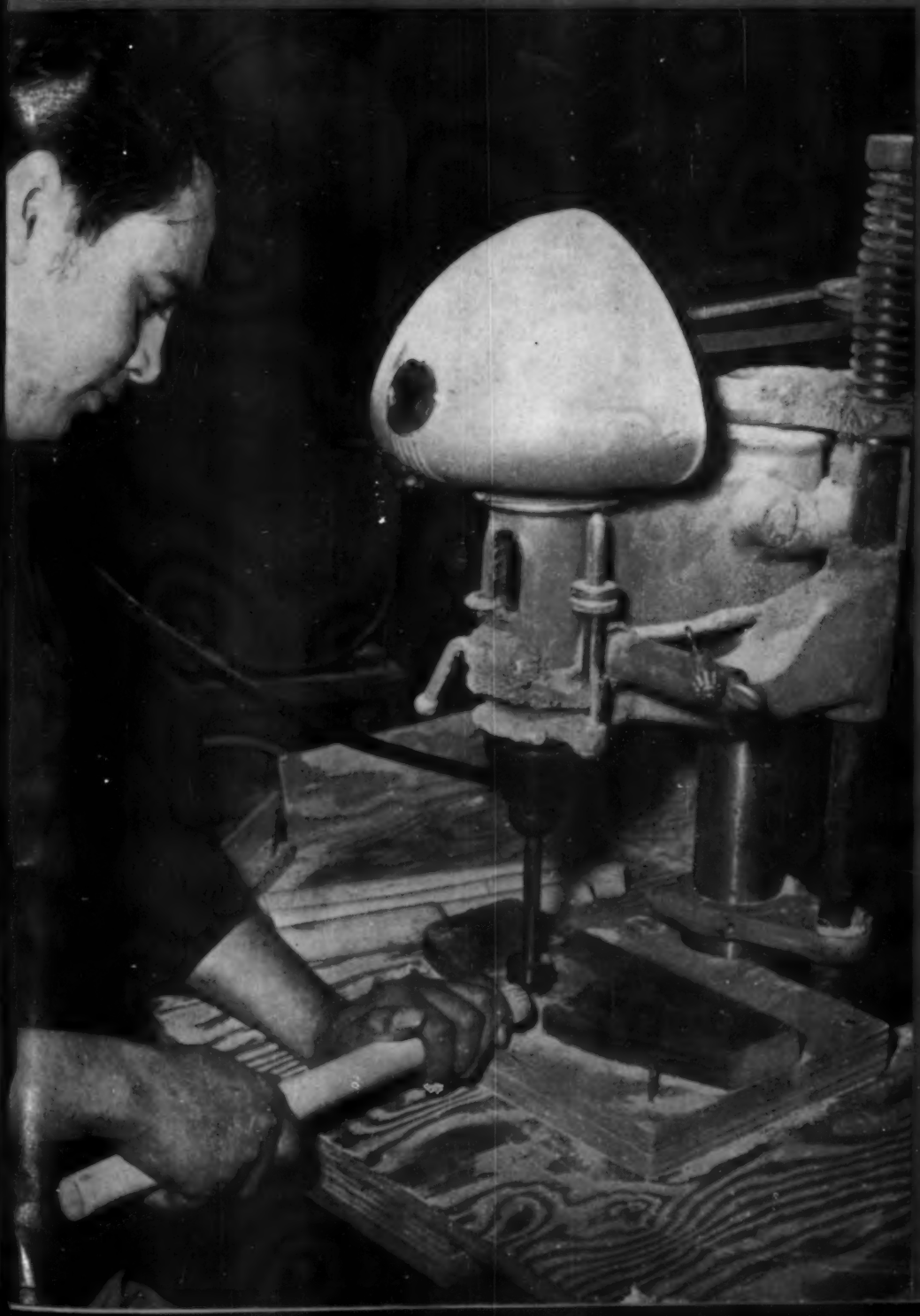
# WOOD
## and
# wood products

June, 1952



Ernest L. Kurth

See Page 23 — WOOD SALUTES

### Modern Cut Stock

On page 26 read how smart management turns planned cut stock operation into more sales and better utilization.

### More On Metalizing

Here's more on the subject that caused so much reader interest in the February issue. Turn to page 25 for more authentic details.

### Core Stock

See picture story on page 28 which shows how core stock for doors can be practically untouched by human hands.

### See These Features

- Military Boxes
- Sharpening Knives
- Testing Plywood
- Markets
- Names
- Trends
- Wood Dictionary
- Foreign Woods
- Wood Puzzlers

A Vance Publication

**The National Management and Production Magazine of the $9 Billion Forest Products Industry.**

# "Whitney equipment . . . in continuous operation . . . maintenance cost extremely low"

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April 11, 1952

Mr. K. O. Brown, Sales Manager
Baxter D. Whitney & Son, Inc.
Winchendon, Massachusetts

Dear Mr. Brown:

Our Whitney equipment, the #97 Double Surfacer and the #393 Automatic Shaper have been in continuous operation since they were installed, turning out exceptional work while substantially reducing the amount of our sanding operations. We have had no trouble with either machine, and our maintenance cost has been extremely low.

The #97 Double Surfacer handles with ease and accuracy our panel work, glued-up stock, chair seats, table tops and our general run of planing.

Our Whitney Automatic Shaper is tooled up for many jobs, both long and short runs. It produces smooth, dependable work and has increased the output of our shaping department tremendously. The ease with which we can change forms permits us to convert from one job to another with a minimum of down time.

We are pleased with the performance of our several WHITNEY machines and the high quality and quantity of work they produce.

Yours very truly,

TEMPLE-STUART COMPANY

B. F. Stuart, Jr.

B. F. Stuart, Jr.
General Manager

The Temple-Stuart Co., well known makers of quality dinette suites and chairs, depend on Whitney Planers and Shapers to maintain the high quality of their product and at the same time to get out large production. Investigate Whitney equipment for quality production at lowest cost. Send today for No. 97 Double Planer and Automatic Shaper bulletins.

Whitney #97 Double Surfacer at the Temple-Stuart Co. plant, Baldwinville, Mass., producing quality surfacing at fast feeds.

Whitney #393 Automatic Shaper turning out chair spindles. Spindle cuts continuously — shapes 3 pieces at a time.

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# WOOD and wood products

Volume 57 No. 6


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(advertisement)

# Mauk Talk

*There's only one test of a practical politician. If he got elected—he is.*

• • •

The drunk got into a taxi and asked to be driven around the park five times. After the third time around the drunk shouted to the driver, "Faster! I'm in a hurry!"

• • •

*"My husband lost all his money."*
*"I'll bet you're sorry for him."*
*"Yes, he'll miss me."*

• • •

There are those who believe that the continued use of ice cubes in drinks will develop a race of people with black and blue upper lips.

• • •

*Control your construction cost at the source of material supply. Get in touch with MAUK.*

*Let us know your specific building needs—conditions under which ordered items will be used and end uses, too. With complete information the MAUK Lumber Co. sends you just what you need, without substitution or waste.*

• • •

Simple Celia says when girls blush it's not because of what *has* happened but in anticipation of what *might*.

• • •

*Beneath this stone lies Murphy.*
*They buried him today.*
*He lived the life of Riley*
*When Riley was away.*

• • •

Hollywood Wolf: "Let's get married or something."

Red Riding Hood: "We'll get married or nothing!"

• • •

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**SW-1370 PLYACIEN**

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**GEORGE KOCH SONS, INC.**

# WOOD and wood products Industry Trends

## This Month's Challenge

**New Lumber Competitor:** A new kind of "lumber" that doesn't come from trees, can't splinter and can't burn, but which can be cut, sawed and joined like an ordinary two-by-four. At least this is the promise contained in a report by a large manufacturer of aluminum.

"Alumber", the name of this new product, not yet in commercial production, will be developed in special sections for use in window sills, jambs, joists, studs, purlins, spandrel beams, channels, door headers, baseboards, trusses, interior and exterior trim, sidings etc.

Today aluminum used in the building field is already the largest single customer of the aluminum industry, accounting for about one-third of the total aluminum output. During 1951 with severe restrictions in force, more than a half-billion pounds of aluminum went into building. This present use is divided into eight general classifications.

| *Classification* | *Million Pounds Used* |
|---|---|
| 1. Roofing & siding | 200 |
| 2. Windows & Accessories | 95 |
| 3. General Construction Products | 48 |
| 4. Ornamental Products | 30 |
| 5. Prefab Buildings | 21 |
| 6. Walls, Partitions, Ceilings | 15 |
| 7. Doors & Store Fronts | 10 |
| 8. Highway Equip. Bridges, Flooring Poles | 5 |

Here is a stirring challenge to the Forest Products Industry. A half billion pounds of aluminum, with its light weight represents more than a half billion board feet of lumber lost to a competitive product. With the large capacities of the aluminum companies built-up with government money they are going to do a real aggressive development merchandising and sales job on these building materials. What are we as an industry going to do—let another market slip out of our hands or are we going to fight this growing competitor—a wood substitute?

## Furniture

**Furniture Trend Down:** It is now nearly a year since the steam went out of the furniture boom, according to Seidman & Seidman, and as yet, there are no signs of a real survival. Lower order books, price uneasiness, abundance of merchandise, and a far from favorable view of immediate future business, have resulted in buyers continuing to shorten commitments.

First quarter furniture manufacturers orders were relatively poor, as was expected. New bookings failed by quite a wide margin to reach the high levels of 1951 when scare buying was in full swing. After allowance for this factor, however, sales figures may be considered quite satisfactory.

Orders booked during the first quarter were down 19% in dollar amount, and shipments were down 16% compared with the first quarter of 1951. The unfilled order book, at the end of the quarter, appears to have been hard hit—down 42% from the comparable date in 1951. However, the backlog at March 31, 1951, was abnormally high because of the rush to place orders in the first quarter of that year.

March orders alone were off only 5% compared with March 1951, but were down 16% from the February bookings. Shipments, however, were 18% less than in March 1951, and 4% greater than the February 1952 shipments.

## Carbide Tool Maintenance

**Tungsten carbide** as a cutting tool for wood has increased the productivity of woodworking machinery and their auxiliary equipment. The increasing use of carbides in our industry has created a definite need for adequate maintenance equipment and trained personel to maintain productivity of these carbide tools at their peak.

An industry survey indicated that an industry-wide program with the complete cooperation of manufacturers and fabricators of machines, tools and supplies was needed. The diversity of applications, scarcity of adequate machines and the need for uniform maintenance techniques indicated that the most satisfactory results would be obtained from a class-room-work laboratory type of presentation.

North Carolina State College and University of Michigan have agreed to cooperate and present such a course for men in the wood industry. Ample equipment tools and supplies for classwork are already assured by interested manufacturers.

The first course will be presented at North Carolina State College early in September. The second course will be presented at a later date at University of Michigan. Subsequent courses will be presented as frequently as the demands from the industry require them. The course will also be presented as part of the regular woodworking plant maintenance course during the regular school year.

The instructors and technicians will be thoroughly qualified and will emphasize tested and accurate maintenance techniques. Men trained in this course should be competent to maintain carbide cutting tools as well as supervise installations of centralized carbide controls.

A second course will be given later in the selection of applications and the operation of these tools. On page 9 of this issue you will find an announcement of this maintenance program and a list of the progressive manufacturers participating and cooperating in this forward step.

## Government Regulations

**New Ceiling Prices** on Northeastern White Pine Lumber. The Office of Price Stabilization has issued a new ceiling price order No. 140 on Northeastern White Pine Lumber produced in Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York and Pennsylvania. The order was effective April 29, 1952.

This regulation covers sales by manufacturers (sawmills, planing mills and concentration yards), including sales, through commission men in the Continental United States.

*(Continued on page 10)*



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# CARBIDE WOOD CUTTING TOOL MAINTENANCE

## FOR

## WOODWORKING TOOL MAINTENANCE MEN

**arranged and supervised by**
**University of Michigan and North Carolina State College**
**with the cooperation and technical assistance of**
**manufacturers of equipment and supplies for**
**carbide tool maintenance**

**instructors** . . . . . Regular school faculty members plus engineers, technicians and specialists in various operations

**equipment** . . . . . Not just one type machine but the latest and most efficient models of all makes designed to grind and sharpen carbide wood cutting saws; groovers, knives, straight, formed and milled-to-pattern; and router bits. These machines will be provided by manufacturers participating in this program

**tools** . . . . . Students will be taught the best grinding methods and procedures for carbide tool maintenance on actual production tools by men who are specialists in their field. These tools will be provided by cooperating manufacturers of carbide wood cutting tools

**classes** . . . . . will run two weeks on the divided class room—work laboratory plan

***Write for Complete Information***

*to*

**UNIVERSITY OF MICHIGAN—PROF. L. A. PATRONSKY**
**ANN ARBOR, MICHIGAN**

**NORTH CAROLINA STATE COLLEGE—PROF. E. SIGURD JOHNSON**
**RALEIGH, NORTH CAROLINA**

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*Congratulations to*

**University of Michigan and North Carolina State College**
for another outstanding example of their service to the woodworking industry.

We consider it a privilege to have this opportunity sharing and participating in this initial presentation of such an important and needed service for our customers.

**E. C. Atkins & Co.**
**Big Four Carbide Tool Co.**
**Carborundum Company**
**Delta Power Tool Div. of Rockwell Mfg. Co.**
**Deluxe Saw & Tool Div. of Rockwell Tools Inc.**
**G. M. Diehl Machine Works**
**Henry Disston & Sons, Inc.**
**Drake Corporation**
**Ekstrom-Carlson & Co.**
**Firth Sterling Steel & Carbide Corp.**
**Hanchett Manufacturing Co.**
**Huther Bros. Saw & Mfg. Co.**
**Norton Company**
**Redco Tool Div. Red Lion Cabinet Co.**
**Samuel C. Rogers Co.**
**Wisconsin Knife Works**
**Yates American Machine Company**

## TRENDS

*(Continued from page 8)*

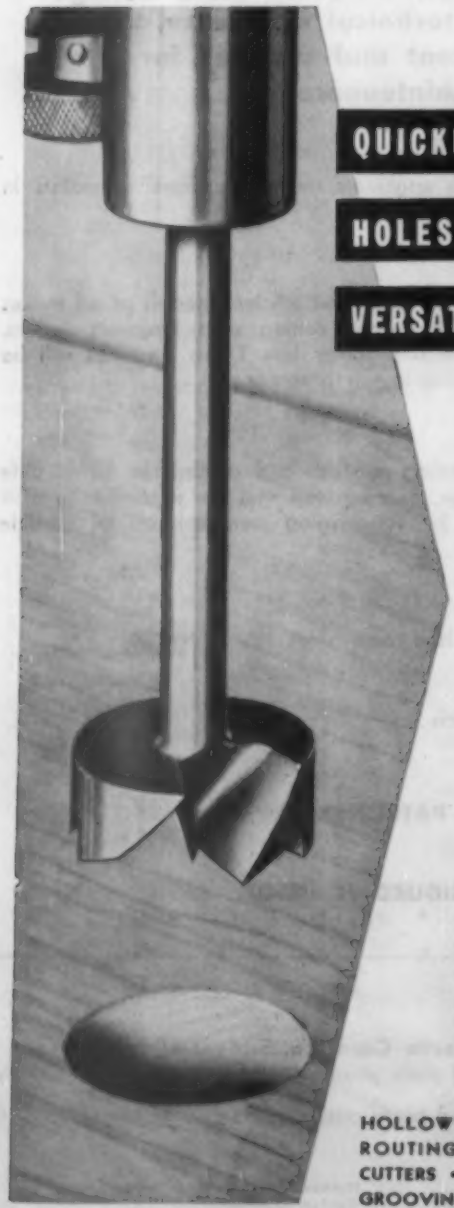
### Utilization

**Wood Chemistry Moves Ahead:** Sawmills of the future in Oregon and Washington and northern California may look like a Rube Goldberg contraption, because industry leaders are now proclaiming a new age of wood chemistry is at hand, according to the West Coast Lumbermen's Association.

Hillman Lueddemann, Portland, president of the Assocation, believes chemical plants can profitably be built adjoining sawmills to use the leftover scrap, trim, edgings, shavings and sawdust. He cited an amazing variety of products which can be made from wood by application of chemical treatments.

Lueddemann hailed many new plants which have been built by the lumbermen in recent years and which in fact introduce the new age of wood chemistry. He said the factory at Longview which manufactures eleven valuable commerical products from Douglas fir bark is an example. Rapid expansion of plants making hardboard from waste wood is another tipoff to the future.

The lumber leader said the most encouraging news is the disclosure that this great potential wood chemical industry can get its raw products from present-day waste or sawmill leftovers. He said kraft paper mills alone, using sawmill scrap, were saving 400,000,000 feet of timber yearly and would soon be saving 700 million feet, from Oregon and Washnigton forests.

QUICKLY BORE SMOOTH HOLES UP TO 3" WITH THIS VERSATILE MULTI-SPUR BIT

A fast, smooth-boring bit for those special jobs beyond the scope of the usual machine bit. Bores any arc of a circle on an edge of a piece of stock. Operates well in either soft or hard woods and is often preferred for end-grain work. Smoothly bores veneered stock without tearing and will bore at an angle, overlapping, or at close centers without splitting stock. Stocked in sizes ½ to 3". Write for facts. Greenlee Tool Co., 2186 Herbert Avenue, Rockford, Illinois.

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ROUTING BITS • MULTI-SPUR BITS • PLUG
CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTIO'


### Lumber

**Lumber For Defense:** The procurement of lumber and wood products by the Corps of Engineers for the defense program from July 1, 1951 to January 1, 1952 was as follows:

| | |
|---|---|
| Lumber | 585,893,000 bd. ft. |
| Plywood | 17,343,000 sq. ft. |
| Switch Ties | 5,771,604 bd. ft. |
| Piling | 3,338,667 lin. ft. |
| Cross Ties | 910,639 pieces |
| Poles | 20,544 pieces |
| Boxes & Shook | 109,173 units |
| Cross Arms | 14,850 pieces |

**Railroads Buy 5% Of Lumber:** The purchase by the railroads of the country of crossties and all other lumber products in 1951 amounted to $165 million dollars. This figure is about five per cent of the total output of the entire lumber industry, as estimated by the Eastern Railroad Presidents Conference. Forty million crossties alone were purchased last year, which represents about 3,000 ties for each of the 400,000 miles of track.

**Bulletwood: Anti Hosiery-Snag:** Manilkara bidentata means nothing to you, ladies, but Forestry School researchers at Yale University think you'll be seeing it around some day. And Prof. Frederick F. Wangaard says it might well save the nation's stenographers and desk workers of all kinds hundreds of thousands of dollars a year.

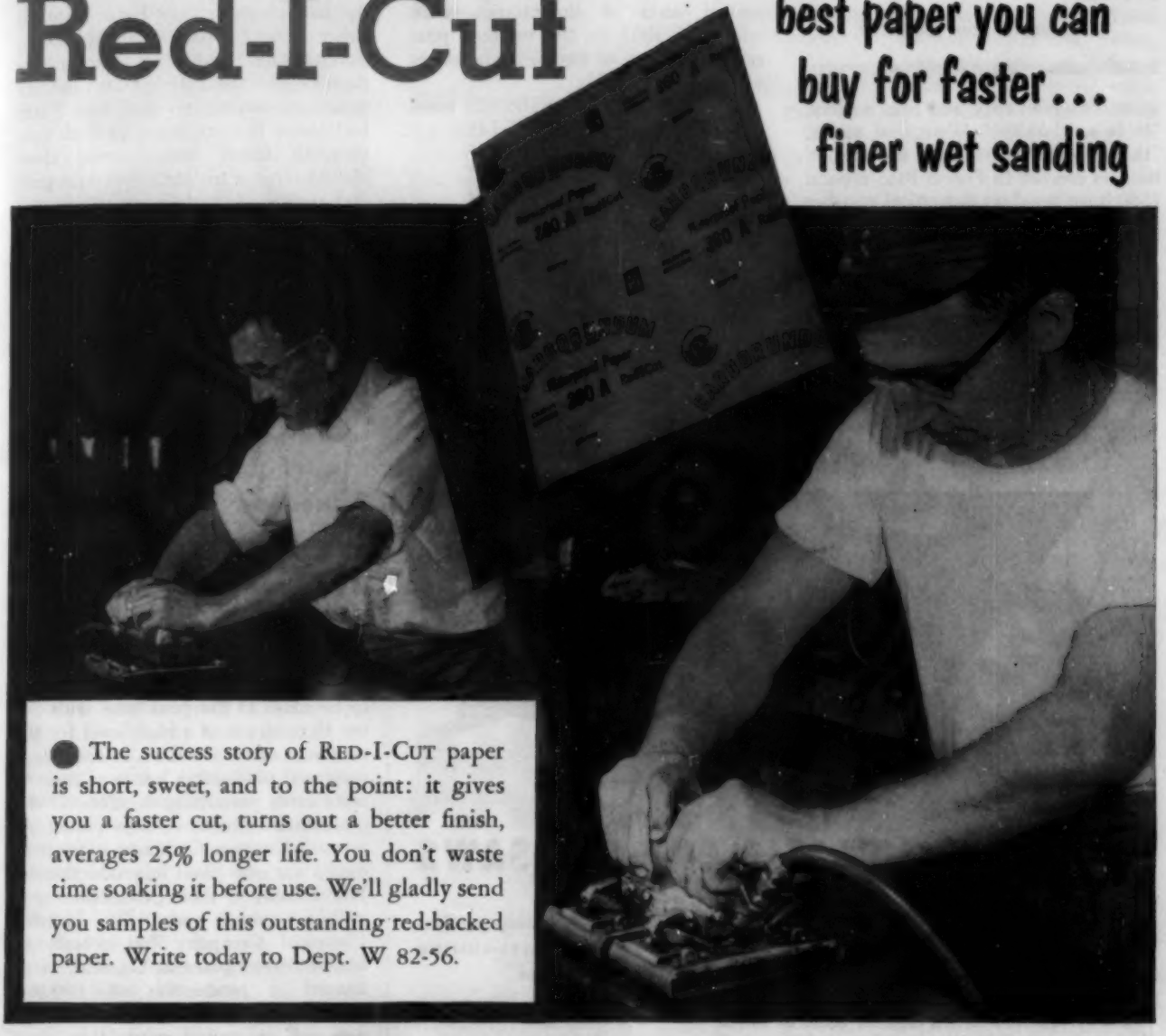
Just for the record, Manilkara b. is a tropical tree, more popularly known as Bulletwood in Central South America. It is one of 75 species of tropical hardwoods scientifically tested during a five-year project for the U. S. Navy at Yale.

Bulletwood, says Prof. Wangaard, is pecularly admirable as a timber from which to manufacture legs or posts of office furniture. It is of extreme durability and practically impervious to abrasions—or nasty scars and

*(Continued on page 14)*

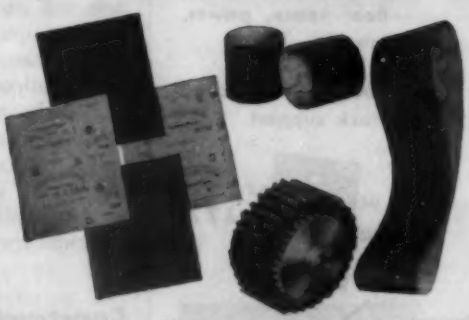
# Red-I-Cut

## best paper you can buy for faster... finer wet sanding



The success story of RED-I-CUT paper is short, sweet, and to the point: it gives you a faster cut, turns out a better finish, averages 25% longer life. You don't waste time soaking it before use. We'll gladly send you samples of this outstanding red-backed paper. Write today to Dept. W 82-56.

## There's a product by CARBORUNDUM for EVERY finishing operation



**CABINET AND FINISHING PAPER** is exceptionally flexible and tough, with longer cutting life.

**BELT CLOTH AND BELT PAPER** retains its high initial rate of cut over a greatly extended belt life...turns out more pieces per belt.

**"NOLAP" PAPER SLEEVES** assure fast, money-saving scroll sanding. No splice marks—high resistance to peeling.

**VONNEGUT BRUSH-BACKED SANDER HEAD** is often the *only efficient way* to finish unusual shapes and contours.

**YOU'LL GET OUTSTANDING** overall economies from a central saw and knife maintenance department, staffed with skilled maintenance men and able apprentices, and equipped with the proper Grinding Wheels and Sharpening Stones from the complete line by CARBORUNDUM.

# Only CARBORUNDUM
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## offers ALL abrasive products ...to give you the proper ONE

*"Carborundum" and "Red-I-Cut" are trademarks of The Carborundum Company, Niagara Falls, N. Y.*

## Trends

*(Continued from page 10)*

splinters which snag and ruin hosiery. "It is so durable," Wangaard states, "that buildings using Bulletwood timbers erected in Puerto Rico around 1500 have stood up to tropical weather for over 400 years."

## Tree Farms

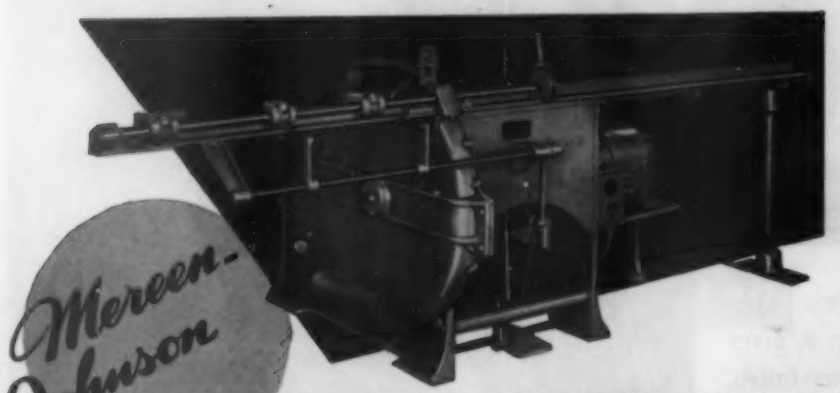
Western Pine Association reports a record increase during 1951 for tree farms on the coast. 777,780 privately owned acres of timberlands were added in 1951 in the western pine region. Acreage of tree farms by states at the end of 1951:

| | |
|---|---|
| California | 1,186,023 acres |
| Oregon | 1,145,141 |
| Montana | 852,675 |
| Idaho | 691,577 |
| Washington | 529,034 |
| New Mexico | 80,000 |
| *Nevada | 12,784 |
| *Colorado | 3,200 |
| *Wyoming | 240 |

*Nevada, Colorado and Wyoming were added to the program in 1951.

**Tree Farms:** South Dakota became the nation's 34th Tree Farm state on Arbor Day, April 25. At seven simultaneous dedication ceremonies throughout the state, 29 private woodland owners received Tree Farm certificates in recognition of their outstanding forest management. Over 20,000 acres of the state's western pine and prairie shelterbelt private woodlands now carry the Tree Farm signs.

American Forest Products industries, national co-ordinator of the Tree Farm program, states that 3,600 woodland owners are now certified tree farmers, with over 25 million acres in the program. Tree Farm certificates are awarded only to landowners who prove that they are practicing good forest management.

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AUTOMATIC CUT-OFF SAWS

*The greater your production . . .*
*The greater the saving*

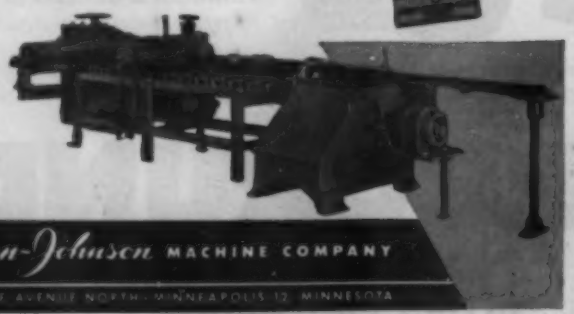
- Ideal for any production cross-cutting operation
- Fewer machines save floor space, power, labor
- Includes new retracting stock support.

**THESE MACHINES** have a capacity equal to two or three swing, straight line or roller carriage cut-off saws—depending on the condition of the stock. They are particularly efficient wherever short lengths are cut from long boards in quantity production. Two saws, mounted opposite from each other on a revolving yoke, make alternate cuts. Each saw disappears beneath the table as it cuts. The operator never has to wait for the saw to return to the back position, as is the case with an ordinary reciprocating type of machine. The stop lever at the operator's left hand leaves the right hand free to handle the stock. Two models: *No. 477, 17" wide. No. 478, 23½" wide.*

Write for Bulletin No. 477

**COMBINATION UNIT**

Automatic cut-off saw, gang rip saw and automatic hopper feed for gang rip saw. The stock leaving the cut-off saw drops onto the bed of the automatic feeder. This in turn feeds into the rip saw eliminating the off bearer of the cut-off saw and feeder of the gang rip saw. Note the saving of two men in this operation.



Mereen-Johnson MACHINE COMPANY

3101 LYNDALE AVENUE NORTH · MINNEAPOLIS 12, MINNESOTA


## Adhesives

**Resorcinol Adhesives:** Resorcinol adhesives used principally in the manufacture of wood laminates has been in short supply since the outbreak of the Korean War. The Defense program resorcinol demands, especially the ship building end, is now believed to be close to the peak rate with the use to continue at a high level for the next year or so. The DPA to encourage increased production last year granted certificates permitting accelerated depreciation writeoffs on new plants. As a result Koppers Company expects to have their new plant in production by July increasing their production to 6 million pounds annually. Heyden Chemical Company has rebuilt its fire destroyed plant at Garfield, N. J. toward a production of 600,000 pounds. Borden Chemical Division's new million pound production plant at Dominques, California will be completed sometime next summer. The price outlook is likely to hold comparatively steady so long as shortages continue. For the Conger team, increased production, improvement of productive efficiency and more adequate supplies could result in easing of prices from the present level.

## Construction

**Construction Contracts Rise:** The 37 states east of the Rockies showed construction contracts on the rise in March compared with February according to the F. W. Dodge Corporation, construction news and marketing specialists. March awards of $1,321,254,000 were 49 per cent higher than February and 4 per cent ahead of March 1951. The total for

*(Continued on page 19)*

HARRY T. KENDALL

Harry T. Kendall, one of the country's prominent lumbermen, died May 2, following a heart attack. His death occurred at White Sulphur Springs, W. Va., where he had been attending a conference of the joint Canada-United States Committee of the Chambers of Commerce of the two countries.

Mr. Kendall was born on May 26, 1882 at Clay Center, Kansas. He entered the lumber business early in the 1900's as a lumber salesman in the South. From 1913-1926, he was General Sales Manager of the Kirby Lumber Company of Houston, Texas. From 1926 to 1932, he was Assistant General Manager and General Sales Manager of the Central Coal and Coke Company of Kansas City, Missouri. From 1934-1950, he was General Manager and Director of the Weyerhaeuser Sales Company, St. Paul, Minnesota, and was Chairman of the Board of Directors of that company from 1950 to 1952.

At the time of his death, Mr. Kendall was prominent in many business and government activities related to the lumber industry. He was President and Director of the Globe Box Company of Houston, Texas; Director, Allied Building Credit, Los Angeles, California; Consultant to the Munitions Board, Washington, D. C.; Chairman, Lumber Manufacturing Industries National Advisory Committee of the Department of Commerce (NPA). He was appointed a Director of the Chamber of Commerce of the U. S. in May 2, 1951 and served in that capacity as well as being a member of its Natural Resources Committee and of its growing board for *Nation's Business* until his death.

Kendall, often referred to as "Mr. Lumber", for the past nine months had given generously of his time and effort in managing the National Lumber Manufacturers Association.

## Trends

*(Continued from Page 14)*

the first three months of 1952, however, was 10 per cent lower than at this time last year. Contracts for the three month span were $3,108,551,000 compared with $3,451,225,000 in 1951.

Non-residential awards in March were $463,276,000 or 54 per cent higher than February but 1 per cent lower than March a year ago. Residential contracts at $592,717,000 were 50 per cent greater than February and 3 per cent ahead of March a year ago. Public and private works and utilities totaled $265,261,000 or 42 per cent more than February and 19 per cent more than March 1951.

**Naval Stores:** On the basis of current rosin prices, the recent increase in freight rates will amount to approximately one percent or 10 cents per cwt. This will mean an increase of 50 cents per drum or $50.00 per car to obtain rosin out of the South.

**BRUCE specializes in quantity production of**

# WOOD PARTS AND DIMENSION

**Send us your specifications or samples and we'll tell you what we can do for you in semi- or completely-machined stock from Southern Hardwoods.**

***Bruce is equipped to serve you!***

- All types woodworking machines
- 5 large sawmills
- Strategic locations for timber
- 25-year experience
- Dependable quality and service

*Send your inquiries to*

BRUCE **E. L. BRUCE CO.**

*1616 Thomas St., Memphis 1, Tenn.*

Green Lumber

they're *supposed* to come back!

In these days of higher operating costs, it's more important than ever to stop "boomerang losses" commonly known as "green lumber rejects!"

Make sure! Standard's world-famous dry kilns, with their internal fan construction and automatic reversible cross recirculation, are your safest assurance of better, more uniform drying results. For new kiln installations, or for remodelling old natural draft type kilns to eliminate waste and finished product "boomerangs" rely on STANDARD to solve *your* problem BEST!

World-famous Lane cedar chests get their start in this fine battery of 20 Standard Kilns at the Lane Company's big Altavista plant. In addition Lane has ordered and twice reordered Standard Kilns for their Smyrna, Tennessee, plant.

WE SELL THE FIRST *Standard...*
*Performance* SELLS THE REPEATS!

*Write for Illustrated Standard Catalog*

*Manufacturers of Internal Fan Kilns*

STANDARD
*Engineers and Manufacturers Since 1907*
DRY KILN COMPANY

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# Wood Puzzlers

This department is designed to help you find an answer to your production and sales problems. Send us the facts. Experience has shown that some other readers can help. Or if you can answer any inquiry below, write us and refer to the number indicated.

### Classroom Blackboard Pointers—No. 47

We are in the market for 10,000 classroom blackboard pointers, and are having a difficult time finding a source. The average wood turner is not interested as it requires special equipment. (N. Y.)

### New Plant Layout and Construction—No. 48

We are starting to plan a completely new millwork plant. We will put this all under one roof, erecting a one story building 60 by 250 to 300 feet. The roof construction and exterior lighting is somewhat of a problem. We do not care for the saw-tooth style of skylights, nor the cupola, unless the sash are large enough. Both these methods are pretty expensive.

We will install all new machinery, electric driven, with a modern dust collector system, but no dry kiln. This mill is to take care of our millwork operation, also all work from the yards that it is called upon to do.

We are seeking information. We are to say the least, somewhat uninformed on the subject. Therefore we will welcome any suggestions that WOOD & WOOD PRODUCTS or interested advertisers in your good magazine find that they are able and willing to give us. We will look forward with considerable interest to any information on this subject that may be forthcoming. (Minn.)

### Carload Lots of Baled Shavings—No. 49

We are interested in purchasing carload lots of baled shavings. Please advise if you know of anyone in a position to ship this material. (Penn.)

### Old Fashioned Butter Tubs—No. 50

We are looking for a source of supply for wooden tubs, similar to the old fashioned butter tubs, and would very much appreciate your advising us where we may find a manufacturer. (N. Y.)

### Knocked-Down Wooden Cases—No. 51

I have been importing chutney sauce from Bombay, India, packed in wooden cases. Each bottle is about 8¾ inches long, 2¾ inches in diameter, and 24 such bottles are packed in a wooden case, with paper waste. The outside measurment of the wooden case is about 19 inches long, 14 inches wide, and 13 inches high. I would like to find a wooden case maker who would supply me knocked-down cases to be shipped to India, which they would reconstruct there and ship back with the product filled. (N. Y.)

**If you have any problem of wood utilization, or cannot find the kind of material or machine for your particular purpose, SEND IT IN to the editor and we will put it in the WOOD PUZZLERS section.**

"took a gamble and won . . . ."

"courageous and consistent . . ."

"dry kilns the 'toughies' . . . ."

# Wood Salutes

**With this issue, we are saluting three more top rank executives, each of whom is contributing his expert knowledge and experience in an important department of the forest products industries.**

## Ernest L. Kurth

Ernest L. Kurth, of Keltys, Angelina County, Texas is nationally known both for his progressive lumber operations and for his unbounded faith in the possibility of producing newsprint from Southern Pine. In 1938, Kurth courageously turned his faith into practical action by building the first paper mill in the South. This mill, and others that followed, have long since justified Kurth's belief that Southern Pine could create a vast Southern newsprint industry.

Today Kurth sits as head of the Southland Paper Mills at Horty, Texas, the town itself named for Dr. Charles Holmes Herty, a chemist whose pioneer research Kurth appreciated and turned to practical use the Southern Paper Mills plant.

Characteristically, Kurth minimizes his part in this industrial revolution. "I took an eight-million dollar gamble and won," he tells friends. "If I hadn't done it, some one else would have." And then he gives much of the credit to Herty and other pioneers in the Southern paper movement.

Kurth's immensely successful lumber, paper and oil equipment enterprizes have made Angelina County the fifth largest industrial area in Texas. His contributions to his own area have overflowed and so affected a whole region, that he was made "South's Man of the Year" in 1949.

## James T. Ryan

"The James T. Ryan Furniture Professorship, supported by the Furniture Foundation, Inc., is fittingly named for the Executive Vice-President of the Southern Manufacturers' Association, who for the past forty years has consecrated his time and talents to the progress of the furniture industry in the South.

"The quality of the things he has done reveals the character of the doer. His careful impartiality in approaching problems; his inexhaustive patience in establishing facts; his open-minded and receptive attitude towards new ideas; his courageous and consistent efforts in accomplishing a wisely adopted course of action; and his high quality of character as a man, shining through them all, have moved us to honor him with this affectionate tribute, richly deserved."

With these words, Henry A. Foscue, president of the Furniture Foundation, Inc., paid deserved tribute to Mr. Ryan in 1948 when a Furniture Professorship was created in Ryan's honor at North Carolina State College.

James Ryan became secretary of the Southern Furniture Manufacturers' Association in 1912 and was elected Executive Vice-President in 1942. During Ryan's long period of creative leadership, the group has grown from a membership of twelve to its current 400 members.

## Gordon C. Wilkinson

Gordon C. Wilkinson, president of Lumber Manufacturers, Inc., of Portland Oregon has gained an enviable reputation for the kiln drying and milling organization he heads because of specializing in the most difficult kiln drying jobs—such as aircraft lumber, domestic and foreign hardwoods, ladder and furniture stock and a long list of notable "toughies". As Wilkinson has said from the start—"bring on the toughest kiln drying jobs—the tougher they are the better we like them".

Wilkinson, a native of Portland, Oregon, graduated from the University of Oregon School of Business Administration in 1925. From graduation until late 1929 he was engaged in the retail lumber business.

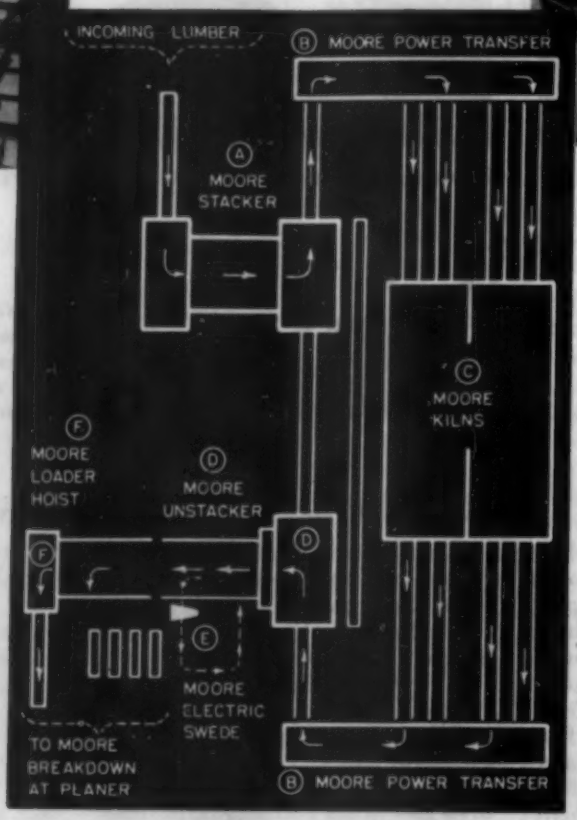
In late 1929 Wilkinson joined the Chapman Lumber Company, Wholesale, of Portland rising to become Secretary and later Vice President, he served this connection 16 years later in 1945.

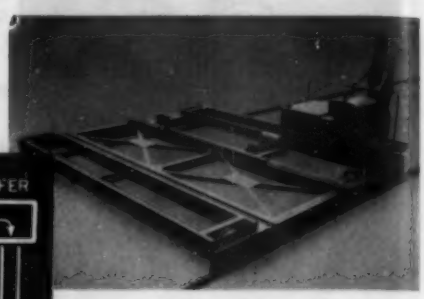
In 1946 Wilkinson. with associates, bought the plant of Lumber Manufacturers, a modern milling-in-transit plant specializing in kiln drying, resawing, and planing, located in Portland, Oregon.

From the first, it was Wilkinson's plan that his organization must be able to do the "toughest", most exacting custom kiln drying jobs for the most particular end results.

# Moore Stacker-Drying-Unstacker Systems Reduce Costs - Increase Production

**A:** Moore Stacker



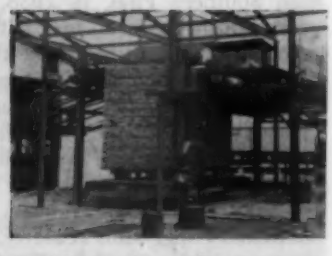



**B:** Moore Power Transfer

**E:** Moore Electric Swede

**F:** Moore Loader Hoist (shown in layout only) for stacking solid packages

**C:** Moore Automatically Controlled Cross-Circulation Kilns



**D:** Moore Unstacker

**High cost "board-at-a-time" handling is obsolete! Reduce your costs the Modern Moore Way, power handling lumber by courses and loads.**

**Many of the modern cost-saving advantages shown above can be utilized by you NOW. Let us show you how—write today.**

**Moore Breakdown Hoist**

***Machine Feeding***

***At Lowest Cost***

## MOORE DRY KILN COMPANY

WORLD'S LARGEST MANUFACTURERS OF LUMBER AND VENEER DRYING EQUIPMENT

Plants also at
North Portland, Ore.
Brampton, Ont., Canada
Vancouver, B. C., Canada

**Jacksonville, Fla.**

# Metallizing of Wood Can Be Accomplished Easily When Fundamental Rules Are Followed

**In Brief . . .**

**Following the wide-spread interest in his first article on metalizing wood, Paul Graham now gets down to more detail about this new surface for wood.**

★

Increased interest in Metallizing on Wood, in which all types of wood surfaces are sprayed with molten metal alloys in much the same manner as conventional finishing materials are applied, is daily resulting in many new applications and more research and study in this field. Besides the process described in the recent article (Metal Finishing On Wood Caskets) to produce a seamless decorative exterior for wooden caskets, many other wood products are now being sprayed with metallizing coatings where their surfaces require unusual hardness or distinctive decorative effects, and when it is desired to coat wood patterns with "strip" coatings that may be later removed for use as casts or molds.

The basic application process is the same in all cases, involving the use of a metallizing or wire spray gun which feeds the alloy metal in wire form by a power unit at a constant preselected speed through a combustion unit (welding gas reducing flame or electrical heating element) for heating to the melting point. As fast as the wire point is melted, concentric air pressure (from 8 to 50 lbs. pressure) is used to atomize and drive the molten metal from the gun nozzle in a mist of small globule to flatten out with a splashing effect and adhere thereto to build up a coating on the surface.

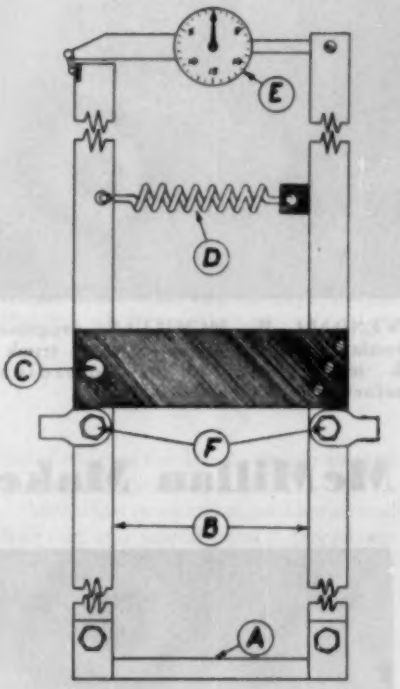
It is said that practically any species of wood may be treated by the metallizing process but special treatment is required for resinous woods (pine and other pitch-containing woods) which have a tendency to sweat when heated Metallizing these woods requires that the work be done in slow and successive stages because their sweating subjects the sprayed metal particles to rapid chilling. While there may be case of overheating the wood, there is practically no danger of burning as the metal globules are so small in their applied form they can be sprayed directly onto cloth without burning.

Authorities advise, however, it is well to use low temperature alloys (lead, tin and zinc) for spraying directly onto the wood surface for the base or primer coating to prevent overheating. These alloys are also the least costly, which may be an important factor when the primer is the heaviest coating application. The minimum depth of this primer coating has been arbitrarily set at about .005-inch, with about .01-inch being the average thickness generally used, and .02-inch or more being used where severe atmospheric conditions may be encountered.

Metallizing alloy metal wires are available in standard sizes, from 20 B&S gauge to 3/16-inch, with 11 gauge and ⅛-inch wire much used in metallizing on wood application. The alloy metals used for various applications generally include: aluminum, babbitt, brass, bronze, copper, lead, monel, nickel, iron, steel (high carbon and low carbon), stainless steel (18-8 type and chrome-carbon type), tin, zinc-aluminum, zinc, electrolytic-zinc available in reels up to 45 feet in length and weights varying from about 17 to 70 lbs. This wire is usually fed to the metallizing spray gun by means of a revolving spindle.

## Dry Surface Needed

The wood surface to be metallized seldom needs much preliminary preparation other than making sure the wood is dry, sufficiently porous to permit adhesion, and clean and free of paint or other finishing materials. Wood patterns are frequently prepared for




**Equipment for testing contraction characteristics.**

metallizing by cleaning the surface with steel wool or medium-fine sandpaper. The purpose is not only to clean the surface of any glaze but on close-grained wood to rough the surface as well so the metallizing coating will adhere to the surface. Unlike conventional finishing materials, metallizing coatings operate with a mechanical rather than a fusion bond.

This process requires careful control as there are variables in metallizing comparable to those encountered in the spraying of conventional finishing materials which directly influence the bond of the metallized coating as the metal is deposited. Aside from careful selection of the proper alloy metal wire and a suitable wire gun for the particular spraying job at hand, these variables are generally considered to include: concentration of spray, dis-

*(Continued on page 40)*

**1.** WENDALL W. MCMILLAN, progressive Pennsylvania Hardwood operator, views truck load of cut-stock made possible by co-ordinated forest, manufacturing and sales policies.

**2.** HOW CROOKED LOG is cut at bend is shown in this mill photo.

When Woods, Mill, and Sales Are Co-ordinated by Progressive Management, you find that. . . .

# McMillan Makes Money with Smart Mil-Pak Idea

**4.** HERE'S WHAT WOULD HAPPEN if our tree was cut into dimension lumber. Heart wood and outside edges would make it difficult to salvage good stock.

**5.** BUT SEE HERE! When tree is cut into bolts so that boards can be straightened out, the heart wood is kept in the center. It's possible to cut for top grades.



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At the McMillan Lumber Company in Sheffield, Penna., forest practices, logging and cutting methods, production techniques, market potentials, and an imaginative sales approach have been smoothly wrapped up by progressive management into an operating package that makes sense by cutting costs while utilizing more of the log.

W. W. McMillan, the owner, is a man with ideas, and the drive to translate his ideas into action. Here, briefly, is how his operation turns out more dimension stock from smaller trees.

Starting in the woods, McMillan cuts down to eight inch trees (he has the first contract with the Forest Service in his area to this effect) because his production methods recovers more useable footage.

Because his system depends on the cutting of dimension stock instead of dimension lumber, smaller trees with crooks and bends can be cut to far greater advantage.

Once at the mill, as shown in the picture sequence, logs are cut into bolts at the point where crooks appear, thus making it possible in later operations to, in effect, straighten out the log.

As illustrated, it is then possible to keep the heart wood in the center, getting far more top quality stock than if the log had been turned into dimension lumber.

After the bolts are cut into boards, experienced operators cut the defects from the boards. The resulting cut stock is then packaged in standard bundles for handling by lift truck. From that point nearly all manual labor is eliminated.

**3. BOARDS ARE CUT from short bolts so that heart wood can be kept in center board—thus gaining maximum utilization of tree.**

Fork lift trucks stack the bundles for air drying; then later place them in new giant-sized, machine-charged, dry kilns. Later, the fork lifts move the bundles from the kiln to inside storage to await shipment.

McMillan production problems—and he's met and solved plenty—have been only half the story. Market devel-

*(Continued on page 58)*

**6. BIG NEWS! You're right. From a tree that normally would have been left in the woods, this big percentage of high grade dimension stock (right) is recovered, with minimum waste (left).**

**1.** Placing of blocks on traveling rubber belt is practically only hand operation.

To see these blocks become finished cores automatically →

# Photo Story Shows How Production Techniques Turn Out Cores

Ingenuity and micro-switches cut production costs.

This brand new production line at Carr, Adams and Collier's Dubuque, Iowa plant depends on an ingenuous combination of machines and micro-switches to turn out door cores with a minimum of labor.

In actual operation, two men feed the assembly belt (1) and a man is required to feed the edge bands (6) at the proper time.

Other-wise, micro-switches and controled speed belts take on the work. When a row of blocks (2) and (3) reach edge of the assembly table, a micro-switch drops them on a longitudinal belt. Another switch feeds surfaced and glued blocks back to second assembly table (7) while other switches actuate pressure bar (8).

This improved production system was designed and installed by Earle Hart Woodworking Machinery Co.

**3.** When right row of blocks touches micro-switch, row moves automatically to next operation.

**7.** Here step number two (2) is reversed. Row of blocks is automatically fed onto second assembly after surfacing and glue application.



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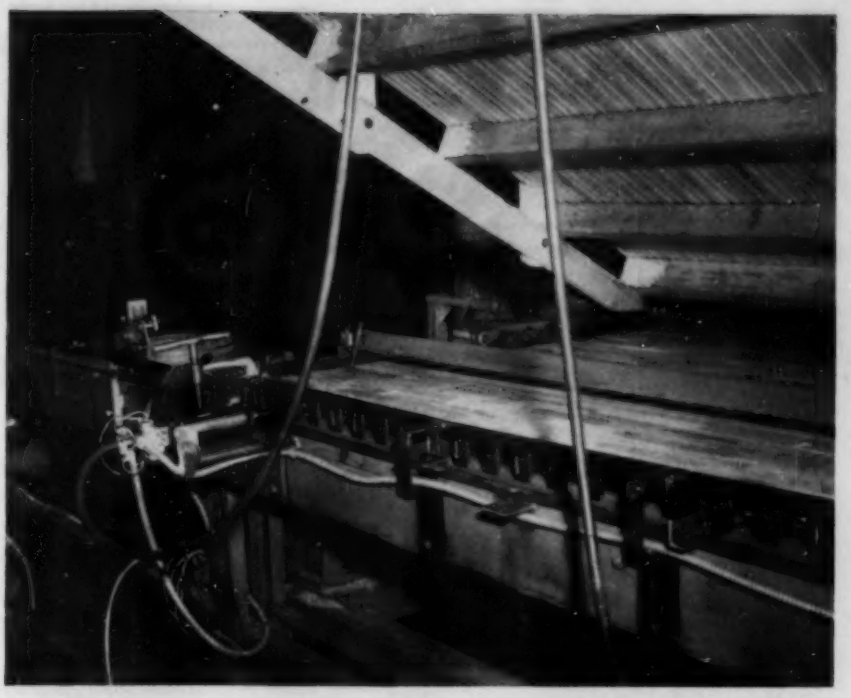
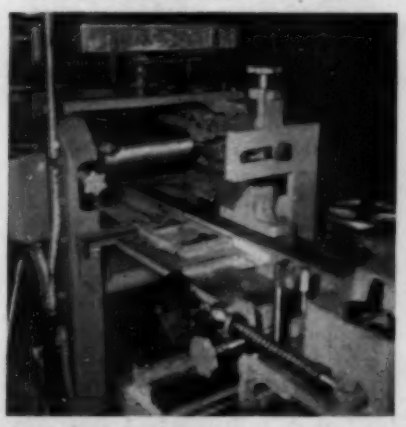
**Start here and follow micro-switch operation to the end.**



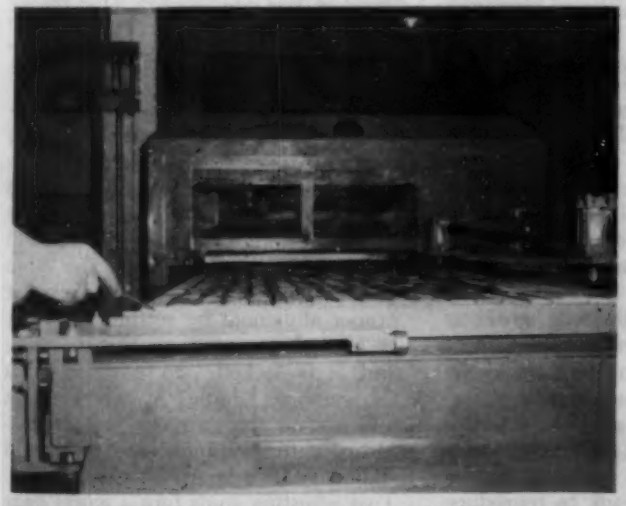
**2.** Here long rows of blocks move crosswise in first step of automatic operation.

**4.** Row of blocks from the assembly table (1) and (2) now are surfaced on four sides.



**5.** From the surfacer, the row of blocks continues on to have glue applied to one side.

**6.** At this point, outside, full-length bands are fed into assembly at proper intervals.



**8.** At this point proper pressure is applied to a predetermined number of rows of blocks. Core with glue still wet is ready for heat.

**9.** Seconds later a cured core comes out other end of electronic gluer. Nearly completely automatic production line for cores is complete.

SHARP KNIVES means better production records.

# How to Sharpen Knives and Cutters

by Paul Graham

Part IV

**In Brief . . .**

**This month the author deals at length with how types of knives, age of machinery, and shop practices control kinds of sharpening equipment that should be used.**

The amount and kind of equipment used for knife and cutterhead maintenance is governed principally by the kind of knives and cutterheads used, the age of the production machinery they are used upon, and the general maintenance practice characteristic of the individual woodworking plant. Wood-cutting machine knives to be considered here include those used on jointers, planers, planer-matchers, moulders, stickers, chippers and hogs, shapers, veneer lathes and slicers, lathes—back-knife, automatic shaping, variety and copying, and tenoners—single and double-end.

Milled-to-pattern knives and bits may be ground in the head on standard cutterhead grinders, or on other conventional grinders out of the head held in chucks or work-holders where they are often mounted in multiple arrangement for production grinding. Milled-to-pattern cutters are milled to shape on their rear side. This makes them much easier to maintain as all that is required for sharpening is to grind them straight across the cutting face. Their profile always remains the same.

Solid wing cutters are sometimes used on moulders and shapers on long production runs or for repeating patterns which have involute radial clearance, with profile and clearance milled into each wing. These cutters also hold their exact shape if the initial angle of cut is maintained when they are ground on the cutter grinder.

Precision profile knife grinders are available which will grind formed knives accurately and uniform to within 0.001-inch tolerance within a minimum requirement of human skill. These grinders usually use a template made to the cross-sectional form of the profile required, with proper compensation for cutter swing, and the knife is fed to the grinding wheel head held in a tilting knife holder that is adjustable for side clearance.

## Profile Knife Grinders

On some of these profile knife grinders the knife-holder is adjustable to tilt backward or forward, or the table on which the knife-holder is mounted is adjustable to compensate for the required cutting angle. In other grinders of this type all grinding clearance angles are produced by adjustment of a floating grinding wheel head, as where it is turret mounted, so that any angle may be obtained on the grinding wheel.

Various followers are used for tracing the profile contour on the template to guide the grinding wheel head with similar track to reproduce the desired profile on the knife edge. Some of these grinders are provided with attachments and work fixtures which permit form grinding of knives mounted in the cutterhead for precision sharpening of all knives in the head. Wheel truing attachments are also provided to maintain proper grinding radius on the wheel and positioning slides are used to maintain the proper wheel nose and follower alignment.

In this connection it might be well to mention that all standard cutterhead grinders permit each cutting point of the knife to be gauged from the eye of the head in grinding, maintain the grinding absolutely uniform, and grind paired heads so they cut a perfectly matched joint, as used on the glue jointer or flooring matcher, or to identical profile, as used on the moulder, shaper or tenoner.

Where a number of small diameter knives and formed cutters are to be sharpened, some plants use oilstone tool grinders which combine up to five basic units in one: coarse oilstone wheel, fine oilstone wheel, grinding cone, leather stropping wheel, and emery wheel. A straight knife grinding attachment is usually provided to grind knives up to 24 inches in length, with an adjustable knife bar for bevel grinding. Other attachments are also available for irregular or form grinding.

## Universal Grinders

These knives and cutters are also ground on universal cutterhead grinders, simple in design and efficient in operation. A typical grinder of this type carries two setting gauges on the wheelguard, used to determine where the face of the wheel should grind the knives at the correct angle to match the cutter gauge and placed in position for the cutters by turning them on the wheelguard. One gauge is used for grinding "cutting-up" heads, the other for "cutting-down" heads.

In setting up to operate this grinder the cutter or knife is placed on the stud and clamped in position with a hand wheel. Vertical adjustment is provided by a knurled collar on the swivel grinding head so the wheel will grind to the depth desired. The edge of the cutter or knife is lined up for proper alignment by setting a pointer at a mark stamped on the carriage, and it is locked into position with the carriage handle. A swivel shank attached to the carriage permits adjustment to any angle and it is held stationary by a knurled locking collar. Two adjusting studs turn a worm gear to bring the cutter or knife up to the grinding wheel, and then it is locked



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in position by a small hand wheel ready for grinding.

Some of these grinders have a fast adjusting hand wheel and also a fine adjustment hand wheel conveniently located at the side of the machine which the operator can reach from the front for feeding the wheel into the cutter or knife while grinding. These machines are turret mounted so that any angle may be obtained on the grinding wheel. Instead of raising the table, they use a metal cylinder which is precision fit and gives more positive and accurate mechanism than that of raising a heavy table.

### Attachments Available

Various attachments and work fixtures are available for use with these grinders. One of the more popular is a graduated turret-type fixture with a spring-loaded stop that is used for grinding knives in the head. The turret revolves 45-degrees each way for angle knives and scales on the turret permit precision set-ups. Where the cutterhead is too long for this fixture, a pair of V-blocks and an arbor are used. This attachment is much-used for grinding thin knives in round heads.

Where the knives are removed from the head for grinding, the same V-blocks and a knife grinding bar with two faces are used. The two faces of the knife bar are T-slotted for grinding heavy slotted knives and knife caps are provided for retaining thin knives on the bar. Stationary stop fixtures are also provided for grinding knives in tenoner heads or similar shear-or-spiral moulder or shaper heads. Various set-up fixtures are also used on these grinders to hold templates or pattern blocks to permit required alignment of cutters, knives and/or bits in the cutterhead, consisting usually of a holder and offset bar mounted in a turret fixture.

### Precision Grinding

Precision grinding units have also been developed for grinding carbide-tipped cutters and knives, equipped with automatic setting and index features which permit an operator to do a precision job of grinding with hardly more than one week's training. These units contain provision to compensate for required clearance angles when grinding profile cutters to simplify the precision grinding operation. These grinding units have been reported to have successfully sharpened such carbide-tipped cutting tools as router bits, straight knives, helical cutterheads and profile form cutters.

Carbide-tipped knives and cutters have also been ground successfully on standard cutter grinders which incorporate the required smooth precision grinding action, stability and freedom from vibration. Some of these feature micrometer control of both the cross-feed and vertical travel for precision adjustment of these important machine movements. Some are also equipped with a coolant tank and moisture pad for use with a diamond-loaded wheel for grinding carbide-tipped cutters.

Lathe knives are sharpened on conventional grinding equipment but the method of grinding and grinder will vary with the kind of lathe on which the knives are used. The chief cutting knives which form the turning are essentially formed cutters but their design differs considerably as does their use in the individual lathe.

The back-knife is always milled to the exact profile required by the turning, but unlike most other wood-cutting knives, the milling is done across the face at an angle, to permit the knife to be bolted to the sash at an angle, while its milled members are mounted perfectly vertical to make the progressive shearing cut.

### Proper Grinding Important

Successful back-knife lathe operation depends upon proper grinding of the knife. Since the back-knife takes a shearing cut, the lines of the cut must slant in the same direction as the shear of the cut. This is usually done by shifting either the wheel or the work-holder to bring one side of the wheel in contact with the knife. The knife bar is slanted so that the wheel strikes the cutting edge first. This is most important as there is a tendency to load and heat if the wheel strikes the soft edge first.

The gouge and/or the V-knife use to make the roughing cut ahead of the back-knife are usually ground on conventional tool and cutter grinders. The pattern or templet used in the bed of the back-knife lathe to guide the roughing cutter is usually made of metal and must be rough filed, ground, or cut to shape with a metal-cutting bandsaw and smoothed with a file or grinding wheel to the exact profile of the turning to be made. These templets are made more accurately and speedily where special metal forming machines, such as endless-band filing and stoning machines, are available.

While they are essentially formed cutters, automatic shaping lathe knives seldom carry a complicated profile on the edge of any single knife. Instead, the profile members are apportioned among a number of different knives as evenly as possible. These knives are not ground to as accurate a shape as those of either the shaper or moulder because they are set on a shearing angle, making it necessary to allow for additional projection and extra width. Standard cutter and precision profile knife grinders are generally used for grinding these lathe knives. Where cut-off knives are used, they are usually ground on the conventional tool and cutter grinder.

### Formed Knives

Automatic variety lathes use formed knives operating either as stationary or revolving cutters. They are usually made of plain tool steel and are ground to pattern. Accurate cutting is governed partly by the profile ground into the knives and partly in the accuracy of angle they are placed in the tool holders. Copying lathes now being used extensively for military wood work use standard cutterheads with knives in a fixed position, round-nose end milling cutters, or router type cutters. Standard cutterhead grinders and tool and cutter grinders are used for sharpening these knives.

Circular lathe knives and cutters used in dowel machines are rolling cutters. The cutting edge is the bottom edge of the cutter, having been milled to form in it, so the cutter profile is not changed by grinding similar to the milled-to-pattern knives used on the shaper and moulder. They are sharpened in a like manner.

### Grinding Wheel Shape

In knife and cutterhead grinding the type and hardness of the steel, the thickness of the blade, and the bevel of the knife usually determines the grade and shape of the grinding wheel. The bond is usually determined by the speed of the grinder. With formed cutters, the shape is usually determined by the bevel and contour as well. As a general rule the grade of the wheel required becomes progressively softer as the steel increases in hardness and heat sensitivity, the thickness of the blade decreases, and the width of the bevel increases. As regards to contour grinding, the wider the grinding contact, the softer the wheel should be.

Although it cannot be stated as a hard and fast rule, dish-shaped

*(Continued on page 32)*

### Sharp Knives

*(Continued from page 31)*

wheels are commonly used for grinding formed cutters, cup or ring-type wheels for straight bevels, and cup wheels or straight wheels for knives with concave bevels used for jointing. Where knives are to be hollow-ground, cup wheels are most convenient as this type grinding wheel may be turned to practically any degree of oblique angle to produce the arcs required in hollow grinding of knife bevels.

### For High Speed Steel

Wheels that are free-cutting and do not glaze are necessary for grinding high speed steel. Grinding equipment suppliers and grinding wheel manufacturers are the best source of information as to the type of wheel to use on any specific grinding job. General practice indicates that grinding wheels of medium grain and hard texture, in grades 36 to 80, are used for rough tool grinding where precision grinding is not required; soft textured and fine grained wheels, grade 80 and finer, are used for light accurate grinding; and wheels of superfine grains of soft texture, grade 180 and finer, are used for fine precision grinding. Carbide-tipped knives and cutters are precision ground for sharpening with diamond wheels and are honed with a diamond hone to a keen cutting edge.

Wheel dressing is of prime importance to good grinding and sharpening in average grinding as well as in precision grinding. As stated previously in an article on saw maintenance equipment, these dressers range from the old "washer" type which is now seldom used to the more modern abrasive wheel and diamond dressers which do not remove as much stock, designed for use with or without the tool rest. These are used to keep the cutting face of the wheel open and sharp as well as to maintain the proper shape and radius.

What's your reaction? There has been widespread interest in this informative sharpening series by Paul Graham. The editors would be interested in your reaction to printing this series as a reference pamphlet. Please let us know. More in July.

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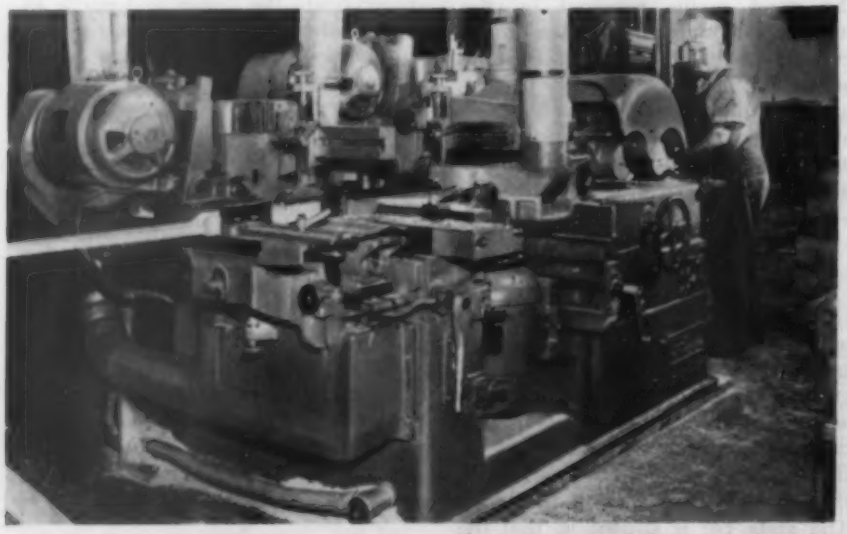

Photo courtesy of Ekstrom-Carlson Co.

# Keep Your Motors Running Better with Proper Care

**Part II**

**In Brief . . .**

**Here's more down-to-earth motor care information from Allis-Chalmers . . . with the spot-light on bearings.**

To insure long life in sleeve-bearings, sufficient oil of good quality, free of foreign matter, should be provided. Ring oiling systems possess a natural advantage in that the flood of oil passing through the bearings tends to wash any grit, dirt, dust, or metallic particles that may have gained entry, into the reservoir where they can settle out of circulation.

Before a machine is placed in operation, any oil piping should be flushed. After the first few days of operation, it is advisable to remove the oil and refill with fresh or filtered oil. This should be repeated at intervals of six months to one year, depending on the amount of service, cleanliness, speed, and temperature of the machine. Oil should be examined periodically for signs of deterioration or sludging. Sludge can block bearing passages and cause failure of the bearing.

Motors with grease-lubricated anti-friction bearings—ball or roller—are generally shipped from the factory with the bearings packed with grease and ready for operation. Maintenance problems are simplified, because manufacturer's instructions, which should be included with the motor, include the quantity and type of oil or grease best suited for proper lubrication, with suggestions for servicing the bearings.

In addition to anti-friction lubrication, the lubricant in ball or roller bearings must also guard the steel rolling elements and races from corrosion. For this reason, it is especially important that the manufacturer's recommendations be followed when renewing the bearing grease.

One charge of grease in anti-friction bearings may last a year under normal operation, but since all greases deteriorate in time, the condition and quantity of the lubricant should be checked at least once every three months. Once a year the bearings and closure parts should be dismantled, and the old grease removed. Kerosene or carbon tetrachloride can be used to flush the bearing. Repack with new grease when reassembling the bearing. *Remember*—never fill the bearing cavity more than half full of grease. Too much grease in bearings promotes friction and heat, and the excess may be forced past bearing seals and into the motor windings.

Users of ball bearings in motors are cautioned against pounding or bumping on pulleys, couplings, or sprockets, in a manner which will transmit the shock to the bearings, as ball bearings are easily injured in this manner. Avoid undue pounding, also, in dismantling or reassembling the motor. In belt or chain drives, avoid needless extra tension that could overload bearings.

*(Read Part III in July)*



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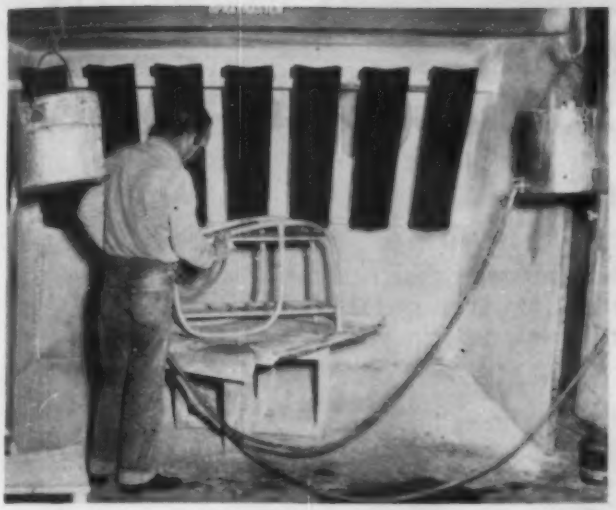
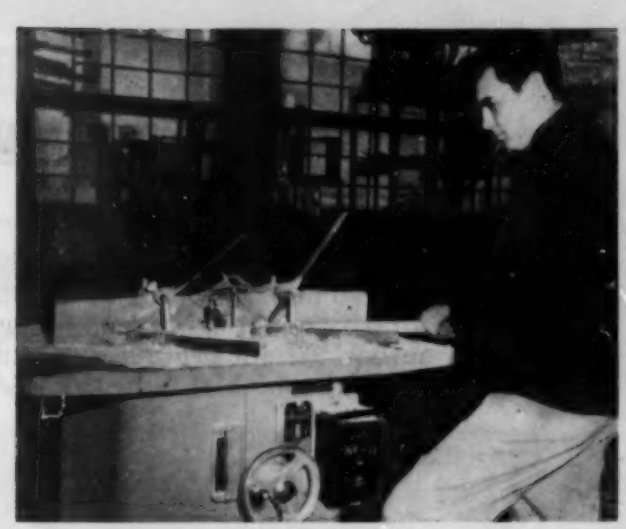


Steam bent chair is sprayed.



Rattan is easily worked. See cover.

# West Coast Plant Uses Rattan for Furniture

by T. A. Dickinson

**Briefly . . .**

**Rattan, which is the wood of certain species of palm trees, is desirable because it can be used successfully for the structural parts of furniture because they can be heat-softened like metals and thermo-plastics for forming operations—and without any subsequent loss of its inherent toughness, flexibility, strength and durability. Read how standard woodworking equipment is adapted to working this "different" wood.**

The initial step in fabricating rattan furniture consists of cutting the logs for use as parts with specified dimensions. Such dimensions include bending allowance of the type computed in work with metal tubing where the parts must be heat-formed, and cutting operations are normally accomplished with standard power saws having skip-tooth blades (since blades of the latter type can rapidly produce the smoothest cuts in work with rattan or ornamental bamboo materials).

Also prior to forming operations, rattan parts are usually processed with shaper and drill press equipment to facilitate their eventual assembly by providing flat surfaces, grooves, etc., in the areas that must be mated. Shapers are equipped with special sintered carbide cutting tools, since the latter have a longer life than conventional wood cutters in processing materials with the surface hardness of rattan. Tool-steel spur bits are inserted in drill press chucks for use in producing grooves, dimensions of which are controlled with simple wood alignment fixtures.

Machined rattan parts are heat-softened by steam in a special steel tank, so that each can be bent with slight manual pressure by means of a form block or bending jig.

Pressure on the bent parts must be maintained until they cool to room temperature. This is accomplished either by nailing strips of wood to the parts prior to removal from a form block, or by allowing parts to cool in bending jigs which have holding components to prevent spring-back.

The nailing technique is desirable where a considerable number of parts must be formed successively in a limited work area. Bending jigs are preferred when a large number of duplicate parts can be simultaneously bent and cooled with each individual jig.

## Tools Needed

Form blocks, alignment fixtures, and most of the other special tools used in fabricating rattan furniture components are made from pine and other standard types of wood materials, since the latter can be readily fabricated with intra-plant facilities. Metal tooling is employed only where production requirements indicate the need.

A few rattan parts are machined, as previously indicated, after they are formed. Then the components of chairs, tables, hassocks, etc., are assembled as necessary with screws and nails.

Efforts have been made to glue-assemble rattan furniture in order to eliminate the need for bamboo ornamentation over nail joints. But to date such efforts have not yielded assemblies of adequate strength and durability.

As a rule, nail joints are covered by spirally winding tape-like strips of bamboo around each assembled area. The ends of the strips are inconspicuously anchored with tacks.

In some cases, rattan parts are machine-sanded before they are assembled; but, following assembly operations, hand-sanding is almost invariably essential due to the intricate contours of rattan furniture. Grades of sandpaper are the types that would be used in finishing any wood product.

Numerous types of organic coatings can theoretically be used to finish rattan, but experience has indicated that spar varnish is the only composition that can adequately waterproof and enhance the natural appearance of the basic wood materials. Waterproofness is an especially important coating quality, since exposures to moisture could otherwise cause considerable warpage or distortion in finished rattan furniture.

Varnish coatings are applied manually with pneumatic-spray guns and standard booth facilities. Each coating is allowed to dry at room temperature in order to prevent defects due to forced drying.

END

# Methods of Testing Adhesion to Wood

Read more authentic information about tests designed to measure adhesive qualities of wood to wood and wood to metal gluing. The author, Armin Elmendorf, discussed shear tests in part one of this article, in the May issue.

**PART TWO**

**Armin Elmendorf**

The peel test shown in Fig. 3 was adapted by the American Society for Testing Materials in 1949. It may be used for determining the peeling strength of adhesives used in bonding flexible sheets such as cloth or thin metal to wood or plywood. The test is limited to materials that will be bent back thru 180° under the expected loading range of the test without failure.

The machine used for pulling the test specimen must be autographic giving a chart having inches of separation as one axis and applied tension as the other axis of coordinates. The separation is continued for a sufficient distance to indicate the peel or stripping value. The peel strength is recorded as the load in pounds per inch of width for separation at a speed of 6-inches per minute. A record is also made as to whether failure was by cohesion in the adhesive, or by adhesion due to lack of adherence to the wood.

Obviously, the A.S.T.M. Peel Test, D 903-49 is not suitable for testing the bonding strength of sheet metal which cannot be bent back thru 180 deg. in the process of peeling. It is most suitable for determining the bond strength of fabrics that can be bent back sharply and that are simultaneously strong enough not to fail in tension.

The peel test shown in Fig. 4 is suitable for flexible fabrics bonded to wood, and to a limited extent also for sheet metal bonded to wood. The test specimen is notched to the surfacing sheet, and the end so separated is bent down manually to start the peel. Loads are then applied and the load at which the peeling is started is recorded as the peel strength. It is apparent that the force required to start the peel will depend upon the curvature of the flexible sheet at the point of separation, the sharper the curvature the greater the concentration of stress at the junction and the lower the load to peel. The test is best used for comparing the peeling strength of different adhesives used for bonding the same flexible facing material. The load should be applied at as nearly the same rate as possible so that the stresses at or near failure are not sustained longer in one instance than in another. This is a practical shop test as the load may be applied in the form of a stream of water flowing into a pail suspended from the specimen.

The test illustrated in Fig 5 developed by Elmendorf Research, Inc., is referred to as the torsion shear test because the glue line is subjected to rotational shear. It has the merit of being simple and requiring only an elementary tool or slot for holding the specimen and a suspended pail for applying the load. For comparable results the loading should be at that

*(Continued on page 36)*

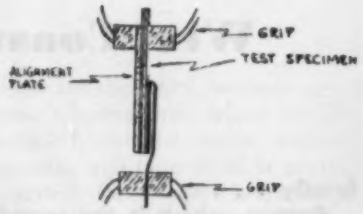



**FIG. 3**

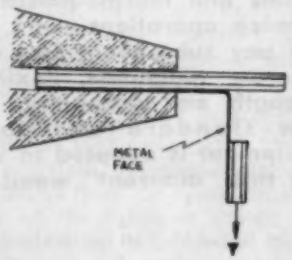
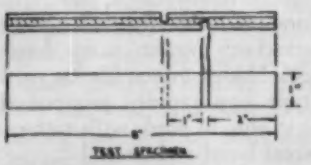



**FIG. 4**



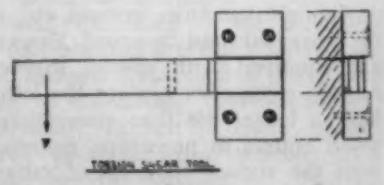


**FIG. 5**



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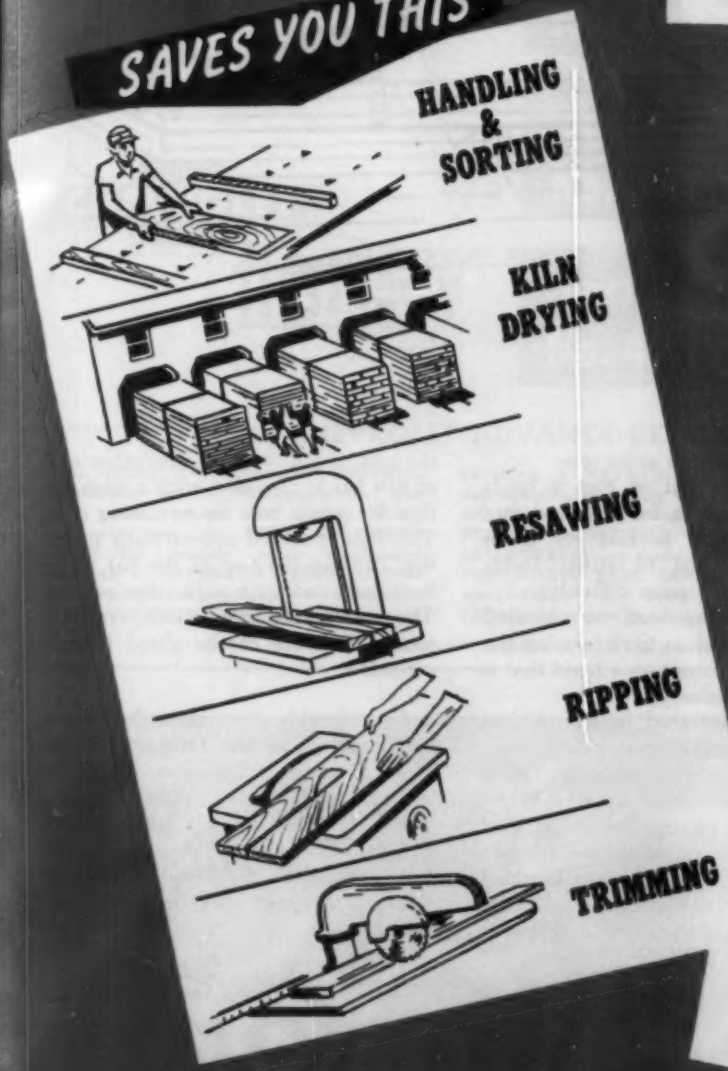


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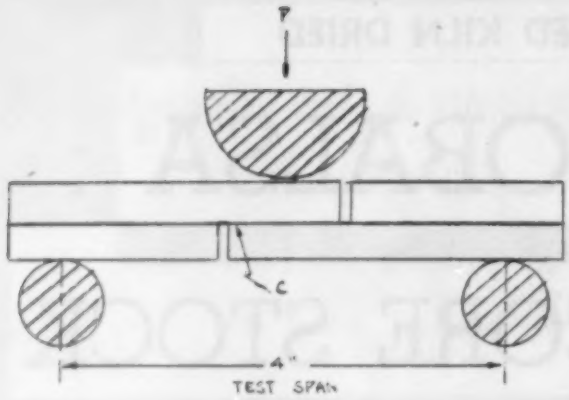


FIG. SIX

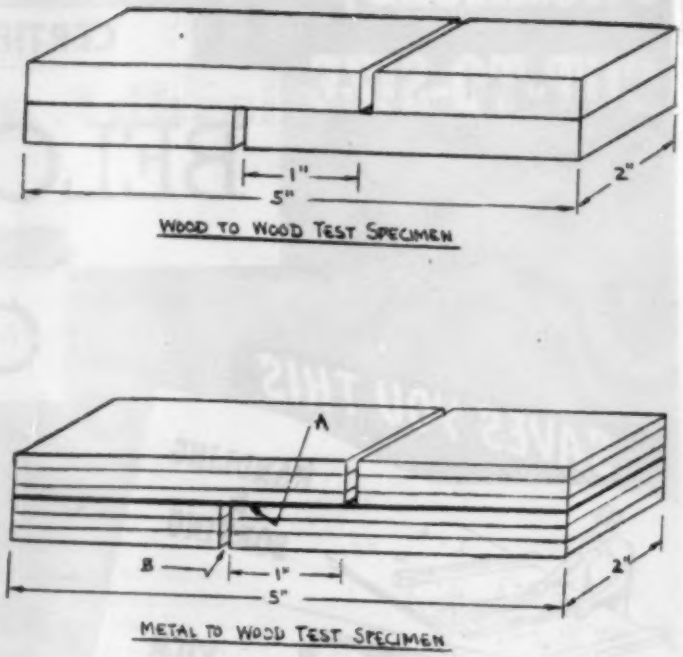


FIG. SEVEN

## Testing

*(Continued from page 34)*

rate which will cause the specimen to fail in about 2 minutes. A record is made of the load at failure and the percentage of wood failure. The test may also be used for determining the shear strength of two laminations of wood bonded together. As in the case of the standard plywood glue shear test, the area subjected to shear must be kept constant when making comparisons. The specimen shown in Fig. 5 is of practical size.

The test shown in Fig 6 developed by Elmendorf Research, Inc. measures the bending strength of two members subject to cleavage. It is well known that glue joints are frequently subjected to cleavage in service and that a cleavage test is therefore desirable. The ordinary knife or chisel test used by a shop mechanic is a cleavage test, and while the wood failure obtained measures the quality of the bond obtained, the knife test provides no numerical data that may be used comparatively. A test has therefore long been wanted which would measure cleavage strength in pounds. The test shown in Fig. 6 is aimed at fulfilling that need. Fig. 7 shows the test specimen, the upper figure showing the dimensions used when testing the cleavage strength of two laminations of wood, and the lower figure the specimen used for determining the cleavage strength of the bond of metal to wood or plywood. In the latter figure the bond at A is to be tested. The upper piece of plywood is simply a reinforcing member bonded to the test specimen to keep it from bending at the notch B when the force P of Fig. 6 is applied. Separation starts at C and continues until the area between the two notches has failed completely. Cleavage strength is recorded in pounds load at failure. Comparisons can of course only be made if all test specimens are of the same size.

The cleavage test of Fig. 6 lends itself to continuous loading and can therefore be used to find out if an adhesive subjected to stress yields gradually, and it is not difficult to apply a continuous load at elevated temperatures and so to determine the effect of temperature on a bond that is stressed continuously.

The test illustrated in Fig. 8 was devised by Elmendorf Research, Inc., for determining the resistance of a glued joint to repeated stresses. When used for determining the strength of bond of dowels set in hardwood, one member in which the dowel is glued is firmly bolted to the testing machine. The other end of the dowel is glued in the end of a wood bar. The other end of this bar is provided with a steel pin that fits into a hole on a rotating disc. This hole is drilled eccentrically in the disc causing the end of the bar to be bent back and forth as the disc rotates. The number of oscillations required to cause failure of the glued joint is recorded.

Considerable test data has been accumulated on the fatigue strength of glued dowel and tongue and groove joints as well as on certain modifications of these devised for furniture construction. The effect of the moisture content of the wood on fatigue strength of glued joints has also been investigated.

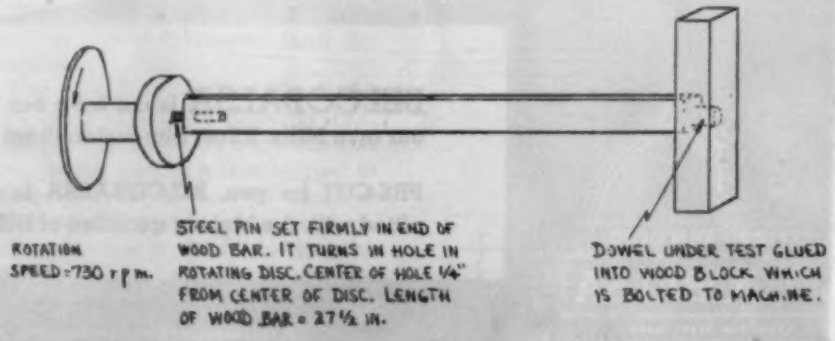
ROTATION SPEED = 730 r.p.m.
STEEL PIN SET FIRMLY IN END OF WOOD BAR. IT TURNS IN HOLE IN ROTATING DISC. CENTER OF HOLE 1/4" FROM CENTER OF DISC. LENGTH OF WOOD BAR = 27 1/2 IN.
DOWEL UNDER TEST GLUED INTO WOOD BLOCK WHICH IS BOLTED TO MACHINE.

FIG. EIGHT



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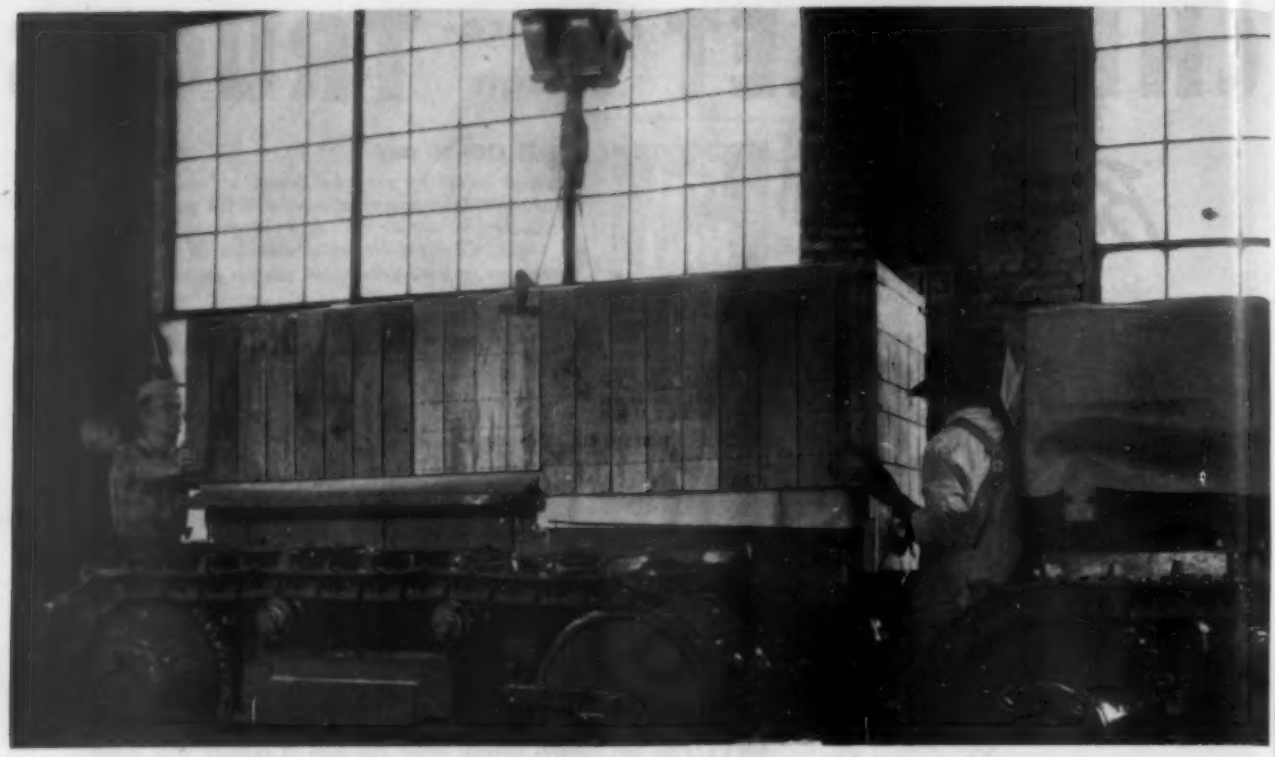


# How Knowledge of Procedures Will Help You Get Your Share of the Military Packaging Business

**In Brief . . .**

**In this second part of a two part article Paul Graham tells how to make use of the various available procedures and literature concerned with defense contracts. Last month's article lists the actual specifications to be followed in a wide range of products.**

★

A thorough study of the publications and specifications previously cited should give the manufacturer basic information of the physical product requirements for military packaging use. A comprehensive survey of his own manufacturing facilities, personnel, and raw material sources in their relation to the end product requirements should show if he is in a good position to go after government military packaging contracts.

The next important consideration is to familiarize yourself with standard procedure. Procurement procedure has been established with prescribed rules and there are no short cuts. The Army primer of procurement procedure is the booklet—"How To Sell U. S. Army", available from the Procurement Information Center, Dept. of the Army, Washington, D. C. for 30 cents. If the manufacturer wishes to become more familiar with formal procedures, he may secure the "Munitions Board Manual No. 90-1, Production Allocation Manual" from the Munitions Board, Washington 25, D. C. This document explains the program for production planning for emergency procurement and the administrative and operational procedure that have been established.

## Obtain Procedures

Specific procedures and criterias may be obtained from the regional procurement offices of the Corps of Engineers or other Military purchasing agencies. The nearest Military procurement agency may be learned by contacting your nearest Department of Commerce field office, or by writing to the Office of Small Business, United States Department of Commerce, Washington, 25, D. C. and asking for Attachment E-Military Purchasing Offices. Attachment F-Major Civilian Government Purchasing Offices-from the same Office of Small Business provides additional procurement agencies.

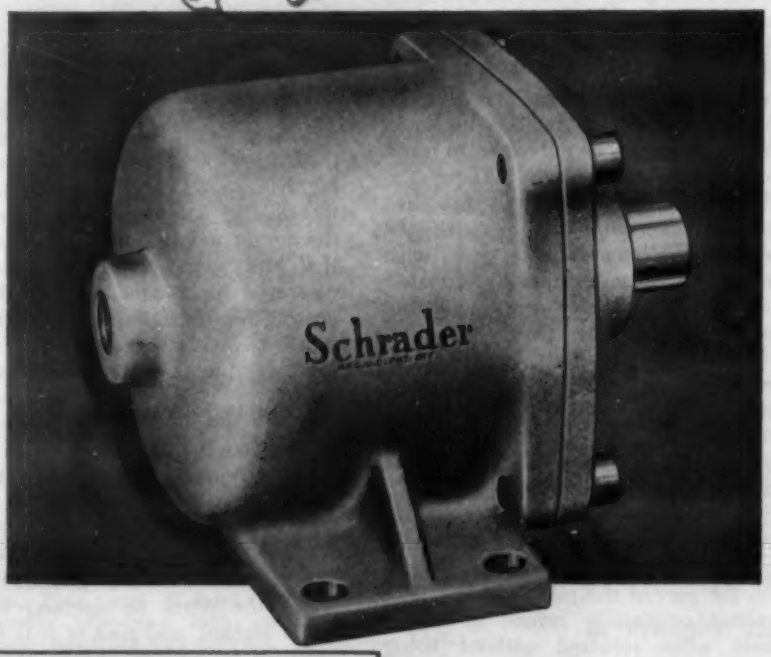
## To Do Business

The booklet—"How To Do Business With the Quartermaster Corps"—is now obsolete but this agency does not purchase lumber or wood products. Another valuable Army procurement guide is—"Purchased Items and Purchasing Locations of the Department of the Army", available from the Current Procurement Branch, Logistics Division, Department of the Army, Washington 25, D. C.

While they are not available for general distribution, the United States

*(Continued on page 40)*

# clamp down on production problems

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**Military Packaging**

*(Continued from page 38)*

Dept. of Commerce distributes two valuable publications to Dept. of Commerce field offices and most Chamber of Commerce offices, where they may be referred to by the manufacturer. The Daily Synopsis of Procurement lists the procurement agency, its location, the quantity and kind of article to be purchased, the date invitations to bid or proposals will be submitted, and the opening date of the bids on a daily basis. This report is of considerable interest to all those manufacturers who wish to become prime contractors.

## For Sub-Contracts

The second publication is the "Weekly Synopsis" which publishes weekly what has been purchased, the dollar value, and the contractor and his address.. This is of interest to those who wish to do sub-contracting as it gives them the name and address of the successful bidder and the nature of the product to permit them to ascertain the possibility of sub-contracting some of the components of the prime contract.

Another valuable procurement reference is "Purchase Assignments—List of Commodities Under Munitions Boards Purchase Assignment and Coordinating Departments", available from the Munitions Board, Washington 25, D. C. Copies of government specifications, manuals and reports may also be obtained by writing the Supt. of Documents, Government Printing Office, Washington 25, D. C. and requesting a list of those available in the desired field. Current developments are usually available from the Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.

## You Must Register

None of the foregoing publications or specifications will automatically place the manufacturer in a position to do business with the Government. To establish yourself in a position to receive bids, it is necessary to register with the procurement agencies nearby that you wish to do business with and get your qualifications on record at Army Headquarters:—Public Information Service, Current Procurement Branch, Logistics Division, General Staff, Dept. of the Army, Washington 25, D. C. For actual procurement of lumber, contact should be made with: J. E. Williamson, Office, Chief of Engineers, Building T-7, Room 1004, Washington 25, D. C.

The initial registering communication should detail your manufacturing and engineering capacity, financial status, names and titles of officers, and normal peacetime products and items manufactured in World War II, if any. Personnel, both employed and available, and a complete list of machine tools and equipment should be included as well as availability of raw materials. It is well to get on the mailing lists of the local Army bases also, to receive bids on direct purchases of minor items .

It is important that this information be complete and reliable as it becomes the manufacturer's representative in the procurement agency's office. This should be documented evidence of what production is possible and what type of product can be manufactured with statements of proof of past accomplishments. The more complete this preliminary filing information is, the better are the chances of getting your share of Government business.

Military procurement usually employs advertising for bids on contracts which are awarded to the lowest bidder considered capable of fufilling the terms of the contract, or by direct negotiation. Under the first method bid-solicitations are mailed, displayed in public places, or published in trade journals or newspapers. Where the direct negotiation methods are employed, the contracting office negotiates on the basis of price quotations, supported by statements of estimated cost, from qualified sources, with due consideration being given to reputation and responsibility of the individual firm, quality of product, satisfaction of technical and delivery requirements, transportation costs, cost sharing and utilization of the most desirable type of contract.

It is not sufficient to just be recognized as a potential supplier and be invited to bid without further effort on the part of the manufacturer. You cannot continually refuse to submit bids when solicited without being dropped from the mailing list of bidders. The usual policy is to drop a manufacturer from the bidder's list after three invitations to bid have been ignored. One need not ignor an invitation to bid just because the amount required by the contract exceeds his capacity to produce, for in most instances the procurement office will accept bids on all or any part of the contract.

The manufacturer who wishes to keep his name on the bidder's list needs only to acknowledge receipt of the invitation to bid and give a legitimate reason why he does not feel able to submit a bid on that particular invitation. A simple request to have your name maintained on the list will result in additional invitations to bid, when accompanied by such an explanation.

It is just as important to get acquainted with the military procurement officer and become registered as a supplier as it is with any other customer. While there are certain formalities to be observed according to established procedure, this may be done through personal contact and through correspondence and the telephone. It is just as important to sell the reliability of your firm as the quality and performance of your product. Good product samples and sworn statements from reliable sources as to reliability and ability to perform are integral points of a sound Military procurement sales program. **END.**

**Metallizing**

*(Continued from page 25)*

tance the gun nozzle is held from the work, temperature rise, particle size, and normal thermal expansion of the alloy metal used in the metallizing process.

Generally speaking, those metals which naturally spray in a concentrated particle stream usually produce highly stressed metal deposits in the metallizing coating. Furthermore, if the nozzle and air cap design are such that will provide an especially concentrated spray cone, the metallizing coating formed by spraying will contain excessive stresses and will result in subsequent cracking, lifting or warping.

The reason for this may be best understood by a comparison of ideal and concentrated spraying methods. In the first method, each molten metal globule flattens out as it strikes the wood surface with a splashing effect. Part of the flattened globule penetrates the pores or opening in the wood surface, and part of it is forced outward in a plane parallel with the surface. Therefore, the outer portions of the flattened particles are not driven into the pores to be firmly locked in place, leaving each particle relatively free to contract as it cools.

When sprayed in a concentrated stream from a concentrated spray cone, which causes the particles to strike closely adjacent to one another, the particles attach themselves together and to the surface at the same time. A very considerable contraction of the entire layer of metal is bound to take place in changing from the molten plastic to solid form, and in

*(Continued on page 64)*

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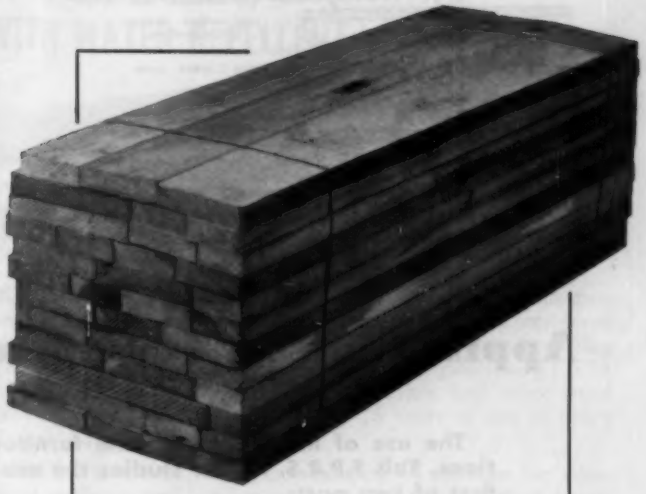
DIMENSOWOOD is the logical way to buy your rough lumber needs.



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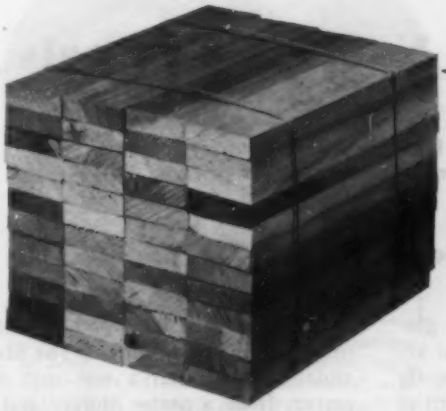

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## Either way YOU SAVE:

1. **Handling time and cost.**
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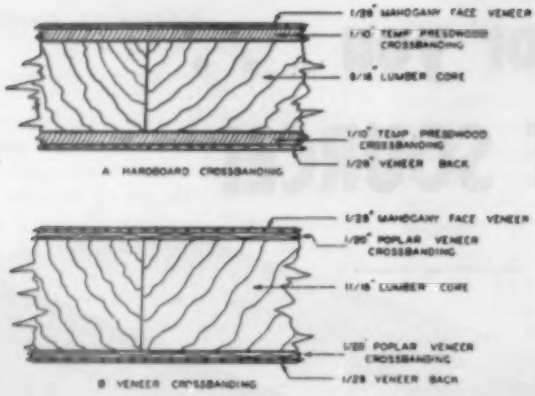



**Fig. 1.—Typical cross-sectional views of furniture top panels, comparing veneer with hardboard cross-banding.**

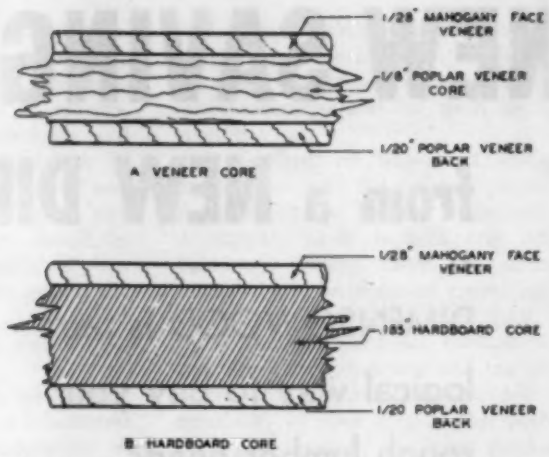



**Fig. 2.—Typical cross-sectional views of 3-ply veneered panels, comparing veneer and hardboard cores.**

# Application of Hardboard in Veneered Panels

**The use of hardboards in the furniture industry has assumed major proportions. This F.P.R.S. report studies the use of hardboards for veneered panels. The first of two parts.**

**by R. M. Boehm and J. S. Harper**

In recent years there has been considerable increase in the use of hardboards in furniture manufacture and in related industries. Of the many, varied applications which fabricators have developed, the use of hardboards in veneered panels is of particular interest. This application has now reached such proportions and the interest is so widespread that a report on the use of Masonite hardboards in veneered panels is timely. We believe that these developments will in time be generally recognized as marking a significant advance in improved furniture construction.

Two basic combinations of hardboard and veneer, and results of tests made to determine their utility are considered. The first of these is the use of hardboard cross-banding, in which the hardboard is laminated between a lumber core and the surface veneer of a thick furniture panel. Cross-sections of typical 5-ply furniture panels using lumber cores are shown in Fig. 1. The second is the use of hardboard as the core in a 3-ply veneered panel for furniture backs, sides, drawer bottoms, etc. The 3-ply construction is shown in Fig. 2.

It is not difficult to describe an ideal material for cross-banding and cores in plywood. From the production standpoint it should be of uniform thickness, it should not break in handling, and it should be available in large sheets to eliminate all edge gluing. From the standpoint of use requirements, it should be permanently smooth, free of surface irregularities that might show through the face veneer, and it should be of uniform strength, density and hardness. Its expansion with moisture increase should be negligible, and it should repel moisture. It should have substantially the same properties in all directions. It should have good gluing properties and provide a firm foundation for veneer. If its cost per square foot should exceed the cost of veneer, its initial cost should be counter-balanced by economies in the labor cost of fabrication and other savings which accompany its use. It is because hardboards closely approach these ideal requirements that their use is expanding.

As a matter of fact, the whole process of hardboard manufacture is designed to achieve hardness, smoothness, dimensional stability, water resistance, and uniformity of physical properties. The grain pattern of wood has been removed, and wood fibers are reassembled in a heterogeneous mass. Weight, thickness and density are controlled within close tolerances.

While there are several kinds of hardboards on the market today, only two types are available in quantity. The first type, which may be described as the "Raw Fiber" hardboard, is made by first fiberizing the wood in attrition mills or similar equipment. The fiber is usually felted into a wet mat on a screen from a water slurry, and the mat is then dried under pressure and heat in multiple opening presses. This type of board is held together with a paper-type bond, which tends to lose its strength when wet. Like paper, these panels may be given a degree of moisture resistance and improved wet strength by the addition of various sizing agents and resins.

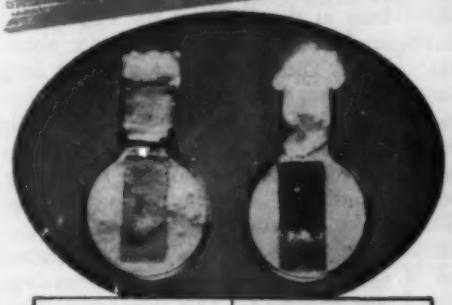
The second type of hardboard is made by the process invented by William H. Mason in the middle twenties. Its manufacture is based upon the use of the Masonite explosion process. In annual production, hardboard produced by this process exceeds that of all other processes added together. In order to explain the Masonite process it is necessary to point out that wood is made up of three principal components—lignin, cellulose, and hemicellulose or wood sugars. The cellulose is held together by the powerful binding action of lignin. The wood sugars serve no useful function from the standpoint of desirable physical properties. Though any lignocellulose material may be used in the Masonite process, at the present time wood is used exclusively. Cordwood is reduced to chips and fed into large bore, high pressure cylinders called "guns". In

*(Continued on page 44)*

*It's Profitable to Make Millwork And Lumber Last Longer!*

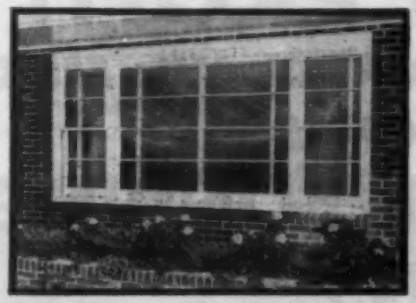
# WOODTOX 120

## 5% PENTA WOOD PRESERVATIVE WITH WATER REPELLENT



| UNTREATED | UPPER PORTION Monsanto Brush Treatment<br>LOWER PORTION Untreated |
|---|---|
| SECTIONS FROM SOUTHERN YELLOW PINE 2 x 4 | |

Two 2 x 4 sections exposed to decay organisms in Kolle flasks. Left, untreated section; right, upper part of section brush-treated with WOODTOX on which decay cultures can't be made to grow, even in the laboratory.



In installations up to 15 years old, sash and doors continuously exposed to severest decay and weathering conditions show no deterioration.

Beverage cases last 3 or more times longer by actual test when treated with WOODTOX. Repair costs are virtually nil—cases are easier to keep clean and sanitary.

Applications of WOODTOX to make wood products last longer are practically endless. Learn what WOODTOX can do for you.

**WOODTOX is furnished in cans, drums, or tank cars for industry use; or 1-gallon and 1-quart cans in display cases for retail sale.**

### WOOD TOX — *What It Is*

WOODTOX is a Pentachlorophenol base preservative plus perfected water repellents in a quick evaporating, penetrating petroleum carrier, providing many desirable characteristics for imparting longer life to wood and wood products. The superiority of PENTA for protection of wood against fungi, termites and other wood destroying insects has been proved by 15 years of use in every conceivable application.

WOODTOX is a clear, clean, non-staining oil solution for treatment of millwork and lumber products. It conforms to or excels National Woodwork Manufacturers Association standards for water repellent efficiency. Also complies with NWMA and Western Pine Association preservative standards. It is widely used by the Army (U. S. Engrs. Spec. 3-186) for treatment of truck bodies, etc.; by the Navy (Spec. MIL-P-906A) for carrier decks, etc.; and the Air Force (Spec. AN-P-76) for plywood, etc.

### WOOD TOX — *What It Does*

WOODTOX, in addition to preventing decay by toxic action against living organisms, also resists staining, swelling, warping, shrinking, checking, mold and mildew. WOODTOX also acts as a primer that deters the blistering and peeling of surface finishes —and, after several days' drying time, will not impair the handling or paintability of wood.

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Multiplying the service life many times of sash and doors, millwork, flooring, boxes, plywood and innumerable other lumber items, is a sure-fire formula for improving product acceptability—for injecting new life into slumping merchandising plans—and for boosting sales among dealers and users. No matter what you make from wood, the relative low cost of WOODTOX offers you unlimited possibilities for greater sales and greater profits.

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WOODTOX, TIMBERTOX, and a Complete Line of Wood Preservatives

## Veneered Panels

*(Continued from page 42)*

the gun the chips are subjected to a carefully controlled cycle of steam pressure, directly injected. At the end of the cycle when the pressure is about 1000 lbs. per sq. in., the gun contents are suddenly released or "exploded" through a quick-opening, hydraulically operated valve. Two different actions take place in this operation. First, under the influence of high steam pressure, moisture, and high temperature, the wood undergoes a hydrolytic reaction which breaks down the lignocellulose bond. More specifically, a portion of the lignin is activated and made available for bonding when subsequently subjected to heat, pressure and moisture under proper conditions. Secondly, the sudden release of the hydrolyzed chips to atmospheric pressure tears them apart to produce a characteristically brown, fluffy fiber.

After refining, and washing out of a major part of the hemicellulose fraction, the fibers are deposited or "felted" on the screen of a Fourdrinier-type machine. The resultant thick mat is passed to multiple-opening, steam heated presses for drying, densification and conversion to hardboards. Under the influence of the pressure and temperature of the press, the lignocellulose bond is reconstituted, so that the board product is really a reconstructed wood, exhibiting the water resistance and wet strength of wood without addition of resins, a feature unique to the Masonite process.

Two important modifications to the above processes should be mentioned. Both methods described are referred to as "wet" processes, because the fiber mat enters the press while still wet. The hardboard has the familiar screen impression on its back. Instead of passing the wet mat through a hot press, it may be dried in an oven before entering the press. In that case, press ventilation is not necessary and the press platens are all smooth. The resulting hardboard is therefore smooth on both sides, and is said to be made by the "dry" process. This represents the first modification.

The second modification is achieved by impregnating the pressed panels, of either type, in a resinous solution and then baking. The resultant "tempered" boards have improved water and alkali resistance, and increased strength and abrasion resistance.

### Hardboard Cross-Banding

What do hardboards show in the way of advantages when used for cross-banding? The most striking improvement relates to surface quality. A standard 5-ply furniture top panel was made up to show the typical surface quality problems encountered when using standard 1/20" poplar cross-banding under mahogany face veneer. This panel had an edge glued lumber core, and was finished with black lacquer to accentuate light reflection. The panel was examined after conditioning at 30% relative humidity. The core was purposely made of low-grade lumber, with open and solid knots, and with three drilled holes ½", ¾" and 1" in diameter. Several surface defects were apparent in the veneer-cross-banded panel. The sunken glue lines at the joints of the edge glued lumber in the core were quite prominent. The surface distortions at both solid and open knots were very noticeable. Both ¾" and 1" drilled holes in the core "telegraphed" through to the surface. The ½" hole was faintly discernible. The pattern of the cross-banding could also be seen.

A similar panel, with 1/10" planed tempered Presdwood cross-banding, was also made. This panel was glued and prepared under identical conditions as the veneer-crossbanded panel just described.

*(Continued in July)*


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# Last Call for FPRS National Meeting

**Sixth Anniversary Meeting, in Milwaukee, June 23-25 and Madison, June 26, to Include Strong Technical Program, Supplier Industry-Sponsored Hour, Plant Visits, Interesting Entertainment, Committee Meetings and Special Speakers**

Nine technical sessions, over 46 papers on important wood industry subjects are scheduled for the Forest Products Research Society Sixth National Meeting to be held at the Hotel Schroeder, Milwaukee, Wisconsin, June 23-25 inclusive.

Throughout the week there will also be smaller meetings of allied organizations, and of working committees within the Society. Each such meeting will be confirmed by usual notices from the chairmen of the committees.

Two highlights of the meeting will be the opening session, Monday, June 23, "Utilization—The Keystone of Intensive Forest Management," by Lyle F. Watts, Chief of the U. S. Forest Service; and the luncheon address, Tuesday, June 24, by William J. Grede, President of the National Association of Manufacturers.

### All Industry Invited

The committee operating the 1952 meeting has made it clear that the meeting is not restricted to FPRS members but is open to all persons interested in forest products manufacture, development or management. The varied program, and informal technical discussions following each paper are entered into by plant production supervisory personnel and management people.

### Quick Program Preview

Persons desiring the complete program details plus pre-registration forms are urged to write, Forest Products Research Society. Box 2010, University Station, Madison, 5, Wisconsin.

*Sunday, June 22,*—Executive Board Meeting; Section Officers Council Meeting; Informal Member Welcoming Party.

*Monday, June 23,*—10:00 A. M. Session I—Forest Products Research. Papers covering Millwork and Prefabricated Housing fields. Mr. Watts keynote address.
2:00 P.M. Session II—Lumber Handling, Papers on Package Handling of Lumber, Retail Lumber Yard Practice, U. S. Navy Handling Practices.
Session III—Fiberboard and Chemical Utilization. Papers on Utilization of Wood Waste by Hydrolysis, Stream Pollution, Wood Waste Core Material for High Pressure Laminates, Properties of Board.

Tuesday evening registrants will be guests of Milwaukee's leading breweries at individual parties in four entertainment spas.

Tuesday, June 24, 9:00 A. M. Session IV—Furniture Manufacturing. Papers on Lumber facilities, Kiln Drying, Gluing Control, Plastic Wood Laminates and Methods-Time-Measurement.
Session V—Barking Equipment. Papers cover portable, hydraulic, mechanical and stationary types of barkers.
Noon—Official luncheon and Annual Business Meeting.
2:00 P.M., Session VI—Furniture Finishing. Papers on Surface Checking, Wood Kitchen Units, Synthetic Resins, Hot Lacquer Systems.
Session VII—Housing and Construction. Papers on Trends and Social and Economic Factors, Nonloadbearing Partitions, New Wall Constructions, Cost of Wall Construction, Prestressed Wood Arches for Roofs, and How Often Should a House be Painted.

Tuesday evening—Wood Industries Suppliers' Paul Bunyan Hour, and Big FPRS Party with Floor Show and Dancing.

Wednesday, June 25—9:00 A.M. Session VIII—Veneer and Plywood. Papers on Tropical Woods for Veneer and Plywood, Soaking and Steaming of Peeler Logs, Drying Hardwood Veneer, Glue-line Cleavage Test, Automatic Moisture Testing Device.
Session IX—General Interest Session. Papers on Elasticity of Wood Beams, Chemical Brown Stain, Chemical Studies of Tropical Woods, Decay Control, Forest Utilization Opportunities, Modern Wood Preservative Evaluation, and Laminated Lumber.

Wednesday P.M. Plant Trips to famous Allis-Chalmers Mfg. Co., Filer-Stowell, Harnishfeger Prefabricated Homes Plants.

Thursday, June 26—Visit to U. S. Forest Products Laboratory, Madison, Wisconsin.

## MEET THE MODERATORS OF NINE FPRS SESSIONS

HUNT LOCKE HERITAGE LENOX

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### Extensive Family Program

A well-planned ladies and family program includes such features as tour of Lake Michigan shore, picturesque luncheon sites, Zoo and Museum trips for children, baby sitter services available. A large ladies committee will be on hand to greet families and arrange entertainment.

### Hotel Reservations

Persons planning to attend are urged to write the Schroeder Hotel direct, or write FPRS for list.

### Preprints Of Papers

Every registrant will receive a complete set (over 46) of the papers to be presented, at the opening of the meeting.

*(Continued on page 51)*

# Appalachian hardwood News

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## WOODICTIONARY

**CANT HOOK**

A tool like a peavey, but having a toe ring and lip at the end instead of a pike.

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A log suitable for the manufacture of rotary cut veneer.

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A battery of cut-off saws used to trim the ends of lumber to even length.

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**West Virginia Hardwoods, Inc.**

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| CODE . . . | |
|---|---|
| 1 Bandmill | 22 Sycamore |
| 2 Resaw | 23 Walnut |
| 3 Circular Mill | 24 Others |
| 4 Planing Mill | 25 Hemlock |
| 5 Dry Kilns | 26 Pine-White |
| 6 Ash | 27 Pine-Yellow |
| 7 Basswood | 28 Spruce |
| 8 Beech | 29 Oak Planking |
| 9 Birch | 30 Oak-Car Stock |
| 10 Buckeye | 31 Oak-S.S.E. |
| 11 Butternut | 32 Oak-Truck Body |
| 12 Chestnut | 33 Oak-Timbers |
| 13 Cherry | 34 Cross Ties |
| 14 Gum-Black | 35 Oak Flooring |
| 15 Hickory | 36 Maple Flooring |
| 16 Locust | 37 Beech Flooring |
| 17 Maple-Hard | 38 Dimension Semi Fin. & Fin. |
| 18 Maple-Soft | 39 Dimension Rough |
| 19 Oak-Red | 40 Stepping Pl. |
| 20 Oak-White | 41 Mouldings |
| 21 Poplar | 42 Others |

# Forest Products Suppliers to Sponsor "Paul Bunyan Hour" in Milwaukee

One of the social highlights of the coming Forest Products Research Society meeting will be the opportunity for suppliers to meet informally and socially with their customers and friends at the all-industry sponsored Paul Bunyan hour. The picture above of a small segment of a similar Hour held in Grand Rapids several years ago gives you an idea of the relaxation and enjoyment following the day's technical sessions.

This year the Paul Bunyan Hour will be held on Tuesday evening prior to the huge FPRS evening party. The ladies are cordially invited.

### List of Sponsors

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Hyster Sales Co.

## CANDIDATES FOR ELECTION

National and Regional nominating committees, headed by Edward Lock, Madison, Carl Binner, Oshkosh, and Robert Cockrell, Berkeley, Calf., have announced their candidates for offices to be elected by mail ballot and installed at the FPRS Annual Business Meeting.

Under the terms of the Constitution, the President-Elect automatically succeeds to the Presidency upon expiration of his term in office. For President-Elect, Robert D. Pauley, Mgr., Special Products Div., Weyerhaeuser Timber Co., Longview, Wash. Pauley is currently FPRS vice-president.

For Vice-President, Lester J. Carr, Manager, L. J. Carr and Associates, Sacramento, Calif. Carr is currently FPRS Southwest Regional Board member. For North-Central Regional Board member, J. Alfred Hall, Director, U. S. Forest Products Laboratory, Madison, Wis.

For South West Regional Board member, Ray E. Schreck, Director of Research and Development, Union Lumber Co., San Francisco, California. Schreck is currently Chairman of the Northern California FPRS Section.

For 1953 National Nominating Committee, (Four men receiving highest number of votes are elected):

H. W. Angell, Chicago, Ill.; J. S. Bethel, Raleigh, N. C.; L. N. Erickson, Berkeley, Cal.; F. J. Hanrahan, Washington, D. C., M. M. Lehrbas, New Orleans; R. C. Rietz, Madison; J. D. Ritchie, Tacoma; and R. A. Zabel, Syracuse.

CHESLEY PAULEY CARR SCHRECK HALL

ZABEL HANRAHAN RIETZ BETHEL ANGELL RITCHIE

# Preview of Papers on FPRS National Program June 23-25

*Looking Ahead in the Package Handling of Lumber* by James E. Stewart.

Describes the work of the author in attempting to reduce unnecessary labor costs in the scaling, loading, and shipping of lumber orders. Relates work done by the author in packaging and shipping lumber and in protecting lumber units from moisture and grimes by packaging with LUM-BR-COTE.

*Never Lift a Board* by Walton R. Smith, Walton Lumber Company, Inc., Mebane, N. C.

There is a revolution in the lumber industry and it's high time. No longer can we do things the old way, the hard way, with the margin between stumpage costs and lumber prices narrowing and the cost of labor ever increasing. The lumber plant that stays in business must stream-line and modernize its organization and its operation, whether it be handling 10 million feet a year or half a million. My company is only two years old from an oat field, built with the motto of "Never Lift a Board." Through some pleasant and some bitter experience we have learned some lessons that might prove helpful to others, if we have any ideas that might help you, help yourself.

*Modern Handling in a Retail Lumber Yard*, by T. Merritt Ludwig, Merritt Lumber Yards, Inc., Reading, Pa.

The problems of modernizing a retail lumber yard are manifold. Step by step we illustrate the methods used to convert material handling operations from the old fashioned practices of manual labor to the new modern methods of material handling. An explanation of the equipment needed, the physical changes to existing yards, the methods of purchasing, unloading, storing and shipping materials follows. Finally, the results obtained through the adoption of modern material handling are given to substantiate the recommendations of the paper.

*The Navy Conserves by Cutting Costs* by Lt. Comdr. Thos. J. Anketell, Jr., Dept. of the Navy, Washington, D. C.

The Munitions Board recently sponsored a special research project to determine the best method, or combination of methods, so that all services could avail themselves of the most efficient and economical handling and storage policy. Because The Bureau of Ships is the largest dollar consumer of lumber in the Navy and has the most exacting requirements for all species used in marine construction. In many of the shore establishments to conserve and to cut costs the Navy employs the "Platform and Butt Board Method," or as it has recently come to be called, "The Clearfield Method." This manner of lumber handling has special application to boards and dimension shipments. Although, originally practiced only for box car shipments, today it is applied to both open and closed freight cars of lumber.

*Utilization of Resinous Wood in Hardboard* by Arthur B. Anderson and William J. Runckel, Oregon Lumber Company Research Laboratory, Portland, Oregon.

Laboratory experiments have indicated that a quality hardboard can be produced when resinous wood is used in varying combinations with regular

*(Continued on page 54)*


NEW MONEY-MAKING METHOD FOR BANDING TOPS

...no clamps!

GLUE and AUTO-NAILER* DO A PERFECT JOB...FASTER.

Mr. A. J. Hill, Jr., Thomasville Chair Co., Thomasville, N. C., (shown banding tops on bedroom furniture) says, *"You can't beat Auto-Nailer for banding tops".*

The Auto-Nailer is unequaled for attaching tight-jointed bands to top panels . . . eliminates screwing, hand-nailing and glue clamps. And, AUTO-NAILER'S 1,000-POUND-SQUEEZE GLUE-NAILING LETS YOU CONTINUE PRODUCTION WHILE THE GLUE SETS.

Auto-Nailer makes, drives and countersinks 3-NAILS-A-SECOND.

LIKE TO SEE SOME SAMPLES? Send us specimens of your work. We'll be happy to demonstrate Auto-Nailer's virtue and versatility, no obligation.

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# FROST

## HARDWOODS

## HIGH CUTTING VALUE

From the moment the car door is opened on a shipment of Frost Hardwoods at your plant, Frost quality minimizes lost motion. As shipped to your specifications, Frost Hardwoods provide the highest cutting value with least waste; uniform drying and texture that facilitate fabrication; rapid flow of semi-finished units to their final machine processing—precision from A to Z. These are the qualities for which Frost Hardwoods are preferred by woodworkers who know them best; these the reasons for your inquiry covering your next requirements.

**FROST**

**LUMBER INDUSTRIES**

DIVISION OF OLIN INDUSTRIES, INC.

**SHREVEPORT, LOUISIANA**

*(Continued from page 52)*

wood fiber. The resinous wood used included ponderosa and southern pine stumpwood and extract-rich ponderosa pine mill waste. No chemicals are required and the process can be used in a conventional wet hardboard process plant.

*Utilization of Wood by Hydrolysis with Dilute Sulfuric Acid* by Nathan Gilbert, I. A. Hobbs, and W. D. Sandberg, Tennessee Valley Authority Wilson Dam, Alabama.

An economic evaluation is presented of a process for wood hydrolysis that was developed through pilot-plant work by TVA and based on the Madison wood sugar process. The evaluation shows that during most of the preceding decade wood molasses, suitable for cattle feeding or alcohol and yeast production, could have been produced from cordwood and offered for sale in competition with black-strap molasses. The production of wood molasses under present economic conditions also would be favorable. The economics of wood hydrolysis is improved further by use of wood waste instead of cordwood and by utilization of unevaporated solutions of wood sugars for production of alcohol or yeast in an integrated plant.

*Investigation of Physical and Mechanical Properties of a Wood Waste Board* By A. J. O'Neill and A. G. H. Dietz, Massachusetts Institute of Technology Cambridge, Mass.

An investigation of a wood waste board has been made to determine such physical and mechanical properties as density, thermal conductivity tensile strength both perpendicular and parallel to surface, compressive strength, transverse strength both dry and wet, water absorption, punching shear strength, hardness, linear expansion, and nail holding power.

*Lumber Unloading Facilities* by James F. Sechrist, Red Lion Cabinet Co.

In the process of unloading lumber it is important that there be only one handling of each board as a unit; freight demurrage costs be eliminated; thereby proper inspection, even when crews are behind schedule; lumber strips be kept uniform and aligned; lumber piles be kept uniform; and the heavy work of lifting and carrying be taken away from the men as much as possible. With these thoughts in mind an unloading device was designed and is described.

*Kiln Drying and Moisture Control in a Furniture Factory* by Stephen D. Pryce, John Widdicomb Company, Grand Rapids, Michigan.

Modern demands for large production without sacrifice of quality has denoted industrial practices universally and the furniture industry is no exception. These demands have brought forth improved kilns, kiln schedules, adhesives and bonding equipment which have in turn altered much of our thinking and practice in the seasoning and subsequent moisture control of our material in storage and process. The John Widdicomb Company has met these changes with good kilns, imaginative schedules and practical moisture control measures within the plant.

*Gluing Control in a Furniture Factory* by Frank T. Parrish.

The need for constant diligence in gluing control in furniture factories is pointedly stressed in this article. Rather than embark on a brand new

*(Continued on page 56)*


INCREASE PRODUCTION as much as 100%

| Lift Installed at | Production Increase |
|---|---|
| Double Surfacers | 40% to 75% |
| Rip Saws | 30% to 60% |
| Cut-Off Saws | 20% to 50% |
| Matchers and Edgers | 20% to 40% |
| Stacking Kiln Trucks | 50% to 100% |
| Box Car Loading Dock | 25% to 50% |

**INSTALL LEITELT LUMBER LIFTS**

A glance at the above figures, FURNISHED BY USERS, proves how Leitelt Lumber Lifts increase production.

You can get these profitable increases in production and save the labor costs of one or two men with a Leitelt Lumber Lift in your plant or yard. Leitelt Lumber Lifts are built in a full range of capacities for handling loads from three to thirty tons easily and safely.

Let Leitelt engineers solve your production problems. Write Today.

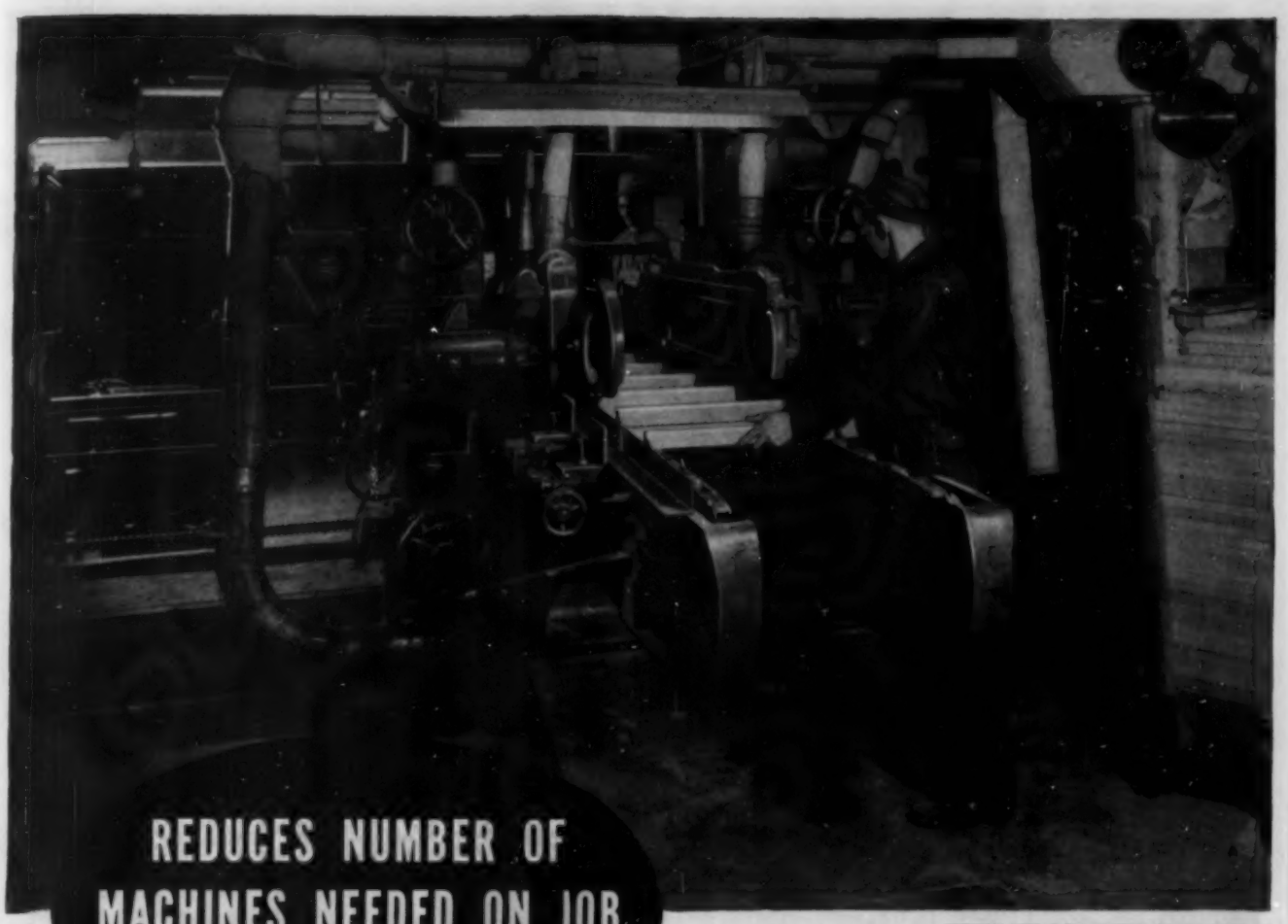
**LEITELT IRON WORKS**

*"Pioneer Builders of Lumber Lift Equipment"*

*335 Mill St., Grand Rapids 2, Michigan*

Also Manufacturers of Power Transfer Cars Car Pullers Power Driven Turntables Subcars and Leitelt Swing Tables

A typical modern installation showing a Leitelt Lumber Lift feeding two cut-off saws. This is how one of the largest table manufacturing plants in the country has increased their production at the vital point where material starts to flow through the plant.



GREENLEE DOUBLE-END TENONER IN OPERATION AT H. L. HUBBELL MANUFACTURING COMPANY, ZEELAND, MICHIGAN

# REDUCES NUMBER OF MACHINES NEEDED ON JOB FROM 9 TO 3...

## ...Greenlee Double-End Tenoner

"At the time we purchased this machine, we were running quite a large job which required three mitre saws, a double cut off saw and five shapers. Within one week after the GREENLEE Double-End Tenoner was put into operation, the machines necessary on this job were reduced to one mitre saw and one shaper.

"In addition to this saving, our Cabinet Room output jumped more than 20% due to more perfect fitting or precision machining and a much improved general appearance of product."

That's what Mr. H. L. Hubbell of H. L. Hubbell Manufacturing Company, Zeeland, Michigan says about the versatile GREENLEE Double-End Tenoner.

Here is just another example of the many important savings and production benefits a GREENLEE Double-End Tenoner makes possible... from the machine room on through the cabinet and finishing rooms.

For, as a "woodworking plant in itself", it literally reaches out after extra work. It steals job after job from single-purpose machines . . . draws into itself scores of different, difficult jobs . . . to bring about new efficiencies, welcome cost reductions and superior finished work.

Write today for new GREENLEE Bulletin 545 with complete details. Greenlee Bros. & Co., 1926 20th Ave., Rockford, Illinois, U.S.A.

MACHINERY & TOOLS

GREENLEE

GREENLEE WOODWORKING MACHINERY: MORTISERS • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING and BORING TOOLS

**F.P.R.S.**

*(Continued from page 54)*

story or technical report on this important subject, comparative word-picture examples are here presented that are readily understood by even the non-technical wood working people Full credit is given to the many sound articles and sources of existing information on gluing and its related subjects, and are specifically listed in the references. A prescription of periodic refresher courses relative to gluing control and a doctor's list of do's and don'ts are recommended to help keep the patient (the furniture manufacturer) from being plagued with that frequent recurring disease, glue troubles.

*New Developments in Plastic Wood Laminates* by George E. Power, The Formica Company, Cincinnati, Ohio.

"Stratawood" which is a decorative variety of compreg, has been widely accepted for use in such items as cutlery handles, brush backs, coat buttons, fountain-pen desk sets, etc. At first used because of its inherent beauty and dimensional stability, it has been constantly varied to meet demands for new and interesting appearance. Combinations with impregnated paper, the use of dyes, imported wood veneer, angular veneer orientation and glued tubing have served to meet some of these requirements. More recently, "Guagewood" a cross-banded variety of compreg available in large sheet sizes, has been introduced for industrial use as die stock, foundry patterns, etc.

*What MTM Can Do For the Woodworking Industry* by D. G. Stohlman, Serge A. Birn Company, Louisville, Ky.

Methods-Time Measurement is a new technique for work measurement. It permits practical analysis of labor requirements—even before the operation begins. This makes it invaluable for use in product design, equipment selection, developing best methods, preventing costly planning errors, etc. MTM combines and refines several previously acceptable techniques. The need for MTM has been accelerated by industry's demands for more accurate work measure and better methods. This paper describes the technique—its use—the reason for its development—and numerous examples drawn from the woodworking experiences of the engineers of the Serge A. Birn Company.

*Hydraulic Barking in a Neutral Sulfite Semi-Chemical Paper Mill,* by J. L. Ham, American Boxboard Co.

The Filer City, Michigan mill of the American Box Board Company has recently installed two Allis Chalmers Stream Barkers for the purpose of peeling the poplar used in the manufacture of Semi-Chemical Neutral Sulfite .009" Corrugating Medium. The variations in barking efficiency in relation to the size, age and condition of the wood used are discussed. Some of the operational troubles encountered in the new installation are also discussed. Some of the effects of barking on the over-all operation of the mill are indicated, including quality and production increases, reduced wear on equipment and savings in the chemicals used for pulping.

*Use and selection of Hydraulic Barkers on the West Coast* by J. S. Abel, Weyerhaeuser Timber Company, Tacoma, Washington.

The question which arises most fre-

*(Continued on page 58)*

**McKEOWN BROS.**

**Use National Casein No. 30**

For 58 years McKeown Brothers have been working wonders with wood. For 32 years they have been manufacturing welded Laminated Arches, Trusses, Beams, Columns and Metal-wood laminated products.

And ever since it was available to them, McKeown Brothers have used National Casein's No. 30 Casein glue to do a most exacting adhesive job!

Spans of 25 ft. to 160 ft. built from lumber with a tensil strength of 1800 . . . Glue joints good for 3400 fibre stress—nearly twice the strength of the lumber. Pioneers in welded laminated Bowstring Truss Construction, McKeown has shipped more than 85,000 without a single complaint—a striking tribute to men, methods, management—and National Casein glues.

You, too, will stick with National Casein Resin and Casein glues —because they'll stick for you. A recommendation incurs no obligation to buy. Write, wire or phone the office nearest you today.

**National Casein**

601 W. 80th St., Chicago 20, Ill. • Broad and Fulton Sts., Riverton, N. J.

# If You Want To Cut Costs

YOU CAN ADD THIS UP

# fast

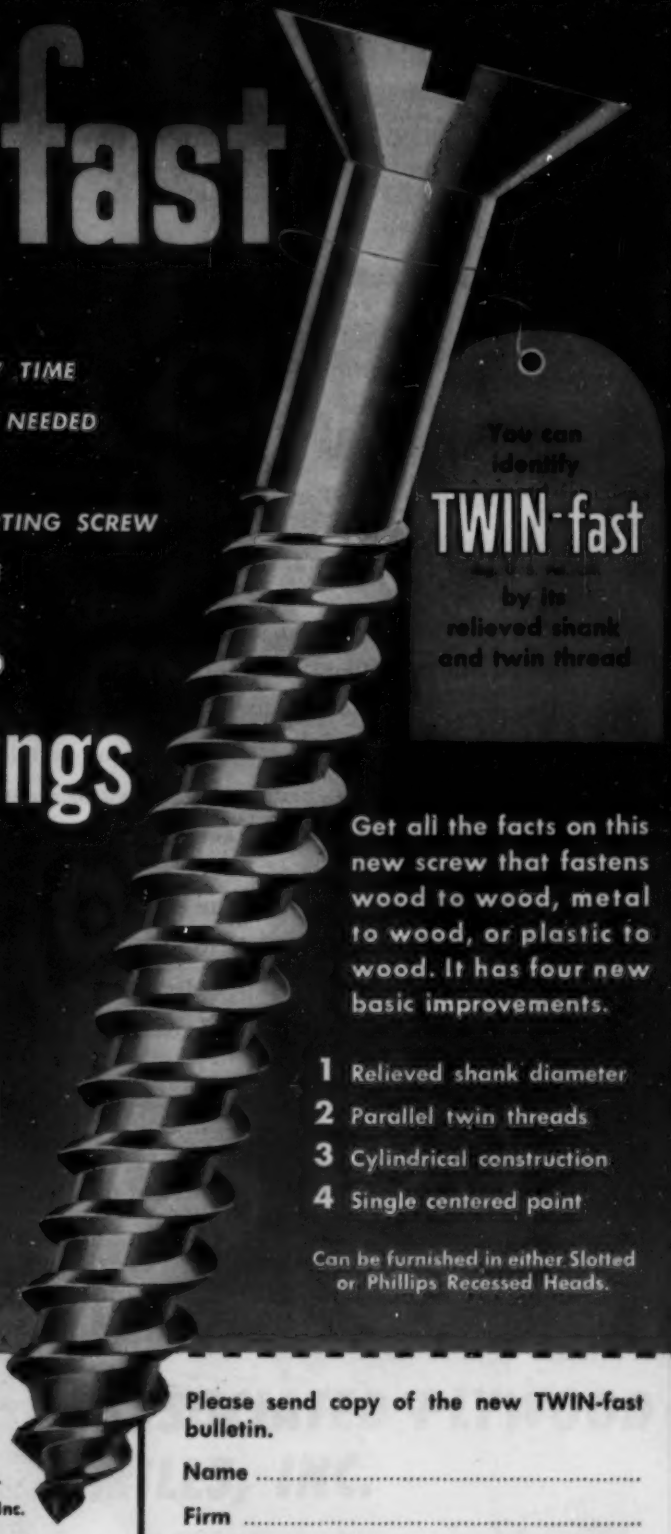
DRIVES FASTER—*SAVES ASSEMBLY TIME*

\+ HOLDS TIGHTER—*FEWER SCREWS NEEDED*

\+ SAFER TO USE—*FEWER REJECTS*

\+ DRIVES STRAIGHT—*SAVES RESTARTING SCREW*

\+ FEWER OPERATIONS—*SAVES TIME*



You can identify **TWIN-fast** by its relieved shank and twin thread

IT ALL ADDS UP TO

# Important Savings for you!

Get all the facts on this new screw that fastens wood to wood, metal to wood, or plastic to wood. It has four new basic improvements.

1. Relieved shank diameter
2. Parallel twin threads
3. Cylindrical construction
4. Single centered point

Can be furnished in either Slotted or Phillips Recessed Heads.

## TWIN-fast

Reg. U. S. Pat. Off.

2,314,391 — 2,314,390 — 2,372,878
2,373,948 and 2,488,186

The Faster Driving... Cost Cutting Fastener

WRITE TO ANY OF THE FIRMS LISTED TO LEARN HOW THIS REVOLUTIONARY NEW SCREW CAN SAVE YOU MONEY!

American Screw Company
Willimantic, Conn.

Blake & Johnson Company
Waterville 48, Conn.

Central Screw Company
Chicago, Illinois, and
Keene, New Hampshire

Continental Screw Company
New Bedford, Mass.

National Screw & Mfg. Co.
Cleveland, Ohio, and
Los Angeles, Calif.

Stronghold Pacific Corp.
Downey (Los Angeles), Calif.

Stronghold Screw Products, Inc.
Chicago, Ill.

Southington Hardware Mfg. Co.
Southington, Conn.

Townsend Company
New Brighton, Penna.

Please send copy of the new TWIN-fast bulletin.

Name .....

Firm .....

Address .....

City..... Zone..... State.....

(Continued from page 56)

quently, at least the one that is most often asked, is, "What type of barker should I put in my mill?" There is perhaps no installation at a mill more affected by various conditions than a barker. The type of mill, the species of logs, their size and condition and the purpose for which the barking is done will all dictate to a large measure the kind of barker selected. There is no general answer to the problem. The selection of a hydraulic barker for a pulp mill or a sawmill presents a number of problems that cannot be answered without study of each individual case.

*Operation of a New Stationery and Portable Barker,* by Gus Jacobson, Soderhamn Machine Co., Talladega, Ala.

Two types of this new debarker, using the same principle are described: Type A, a stationary or semi-portable model where pneumatic pressure is used, and Type B, the portable version using centrifugal force and springs for pressing the debarking tools against the log. The new principle is in the tools. Each tool presents a sort of angular face to the direction in which it and the log are being moved against each other and this permits each tool to be deflected and follow each contour of the log.

*Finishing of Wood Kitchen Cabinet Units* by D. K. Lutes, Sherwin-Williams Company, Chicago, Ill.

The paper describes the methods, procedures and products used in finishing wood kitchen cabinet units.

**STETSON-ROSS MACHINE COMPANY**
**3200 FIRST AVENUE SOUTH**
**SEATTLE 4, WASHINGTON**

**With the recent loss of the Company's long-time President, Wilmot T. Pritchard, the Board of Directors wishes to announce that the progressive policies and manufacturing activities of the Company will be continued to meet the changing needs of the forest industries.**

**We wish to assure our customers, who have contributed so much to the success of the Company's products, of the maintenance of full sales, engineering, and parts service.**

**Gerald Frink, Chairman of the Board**
**A. D. Orr**
**H. C. Hilke**
**H. F. Jefferson, Secretary-Treasurer**
**Board of Directors**

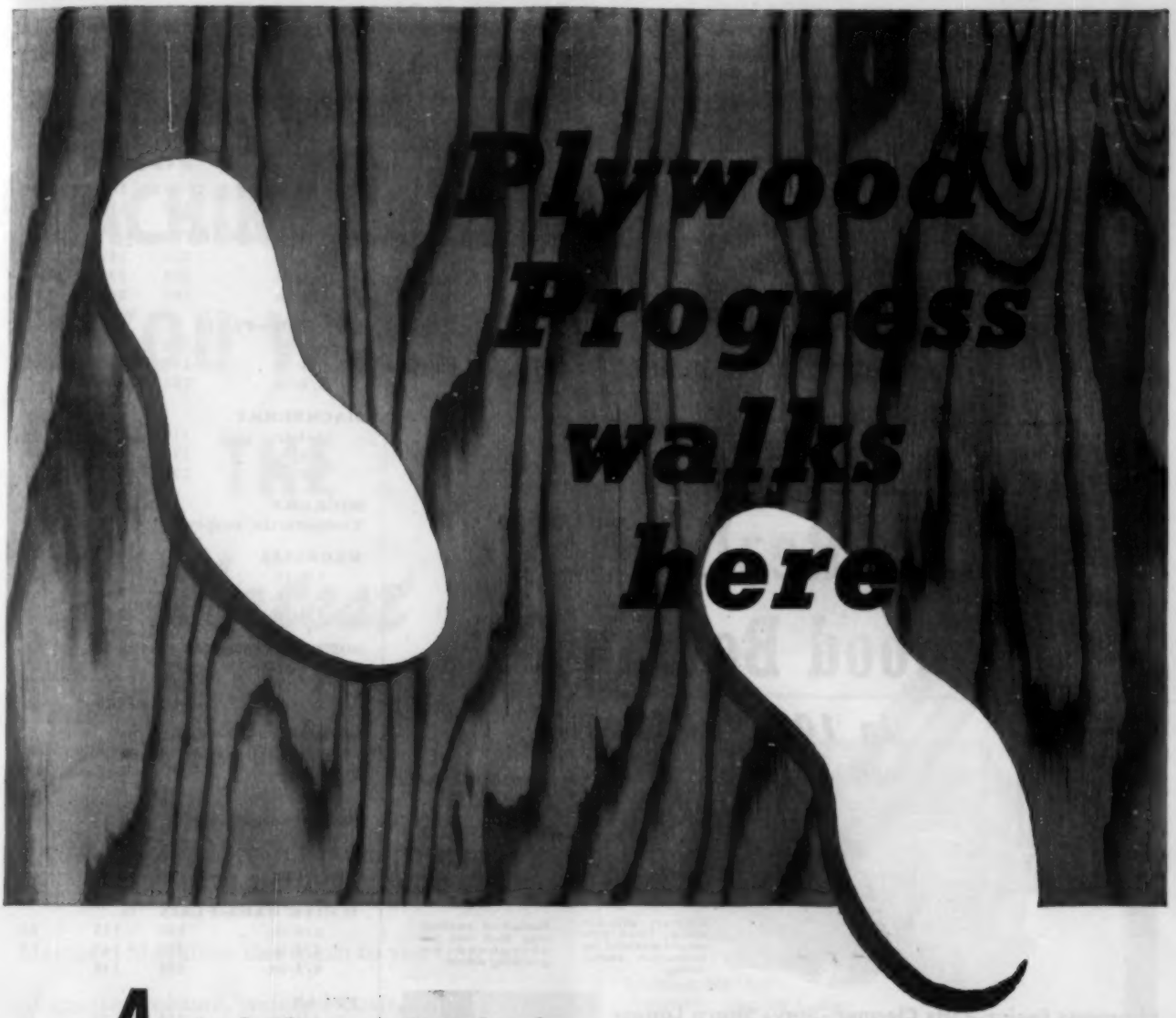
**McMillan**

(Continued from page 27)

**McMILLAN CUT STOCK piled for air drying in pallet form.**

**GIANT SIZED KILN is charge with lift truck to save costs.**

opment has taken hard work to convince customers that McMillan's ideas make sense. Previously, cut stock frequently was developed from left-overs. McMillan's hardest point to make in selling is that he is equipped to handle his customer's complete needs in cut stock. Once he does make the point, this service is his best selling weapon.




Associated makes a type, size and grade of Douglas fir plywood for every building need:

*Interior-type:* For walls, ceilings, cabinets, built-ins; for sheathing and subflooring.

*Exterior-type:* For siding, outdoor signs, farm structures, boats of all sizes and shapes.

*Sea Swirl* (interior and exterior). A beautiful decorative plywood for remodeling and new construction.

*Vertical Grain* (interior and exterior).

*Mahogany-faced Plywood* (interior).

*Handy Panels* (interior and exterior).

*Plyron* (interior and exterior). Plywood core between hardboard surfaces.

All APMI plywood is manufactured in the heart of the Douglas fir region of Oregon; is grademarked and trademarked; is available through branch sales warehouses in major building cities, sold by experienced plywood men. Your inquiries are invited.

**BRANCH SALES WAREHOUSES:**

4268 Utah Street, St. Louis, Missouri
4814 Bengal Street, Dallas, Texas
4003 Coyle Street, Houston, Texas
1026 Jay Street, Charlotte, North Carolina
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## ASSOCIATED PLYWOOD MILLS, INC.

**General Offices: Eugene, Oregon**

**Plywood plants at Eugene and Willamina, Oregon**

**Lumber Mill at Roseburg, Oregon**

APMI

# MARKETS

**These prices are estimates made available by Mr. George Land, publisher of the *Hardwood Market Report*, and reflect prices as indicated in his copyrighted issue of May 3, 1952. Mr. Land's complete report is available weekly; those who want the entire list should contact him c/o Box 5716, Memphis 4, Tenn.**

### SOUTHERN HARDWOODS

**F.O.B. mills—Texas & Louisiana area—estimate of present FOB Texas & Louisiana mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on hand-sawn Southern Hardwoods in carload quantities, random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M', on straight cars of upper bracket grades premiums are frequently being paid.**

**ASH—FIRM TEXTURE**

| | FAS | No. 1C | No. 2C |
|---|---|---|---|
| 4/4-in. | 155 | 110 | 62 |
| 6/4-in. | 170 | 120 | 67 |
| 8/4-in. | 180 | 140 | 70 |

**BASSWOOD**

| | | | |
|---|---|---|---|
| 4/4-in. | 160 | 125 | 80 |
| 6/4-in. | 170 | 135 | 87 |
| 8/4-in. | 180 | 145 | 90 |

**BEECH**

| | | | |
|---|---|---|---|
| 4/4-in | 125 | 100 | 55 |
| 6/4-in. | 140 | 110 | 60 |
| 8/4-in. | 167 | 127 | 72 |

**CHERRY**
Same as Appalachian

**RED GUM—PLAIN**

| | FAS | No. 1C | No. 2C |
|---|---|---|---|
| 4/4-in. | 200 | 150 | 70 |
| 6/4-in. | 230 | 170 | 75 |

**RED GUM—QUARTERED**

| | | | |
|---|---|---|---|
| 4/4-in. | 220 | 165 | 75 |
| 6/4-in. | 250 | 190 | 90 |
| 8/4-in. | 260 | 200 | 95 |

**SAP GUM—PLAIN**

| | | | |
|---|---|---|---|
| 4/4-in. | 110 | 90 | 40 |
| 6/4-in. | 130 | 110 | 42 |
| 8/4-in. | 160 | 140 | |

**HACKBERRY**

| | | | |
|---|---|---|---|
| 4/4-in. | 110 | 90 | 60 |
| 6/4-in. | 125 | 105 | 75 |
| 8/4-in. | 135 | 110 | 75 |

**HICKORY**
Temporarily suspended

**MAGNOLIA**

| | | | |
|---|---|---|---|
| 4/4-in. | 170 | 125 | 65 |
| 6/4-in. | 185 | 143 | 84 |
| 8/4-in | 205 | 147 | 86 |

**SOFT MAPLE—WHAD**

| | | | |
|---|---|---|---|
| 4/4-in. | 130 | 110 | 67 |
| 6/4-in. | 145 | 120 | 77 |
| 8/4-in. | 155 | 125 | 80 |

**SOFT MAPLE—WHND**

| | | | |
|---|---|---|---|
| 4/4-in. | 115 | 90 | 60 |
| 6/4-in. | 130 | 105 | 75 |
| 8/4-in | 135 | 110 | 80 |

**RED OAK—PLAIN**

| | | | |
|---|---|---|---|
| 4/4-in. | 175 | 105 | 60 |
| 6/4-in. | 190 | 135 | |
| 8/4-in. | 200 | 140 | |

**WHITE OAK—PLAIN**

| | | | |
|---|---|---|---|
| 4/4-in. | 180 | 115 | 60 |
| 6/4-in. | 195 | 140 | |
| 8/4-in. | 205 | 145 | |

**PECAN**

| | | | |
|---|---|---|---|
| 4/4-in. | 110 | 90 | 50 |
| 6/4-in. | 130 | 110 | 60 |
| 8/4-in. | 155 | 130 | 65 |

**POPLAR—PLAIN**

| | FAS | S&S | No. 1C |
|---|---|---|---|
| 4/4-in. | 165 | 155 | 125 |
| 6/4-in. | 185 | 175 | 140 |
| 8/4-in. | 205 | 195 | 150 |

**SYCAMORE—PLAIN**

| | FAS | No. 1C | No. 2C |
|---|---|---|---|
| 4/4-in. | 115 | 95 | 60 |
| 6/4-in. | 125 | 105 | 60 |

**TUPELO—PLAIN**
**TUF TEXTURE—DEEP SWAMP**

| | | | |
|---|---|---|---|
| 4/4-in. | 110 | 90 | 40 |
| 6/4-in. | 130 | 110 | 42 |
| 8/4-in. | 160 | 140 | |

**WILLOW**

| | | | |
|---|---|---|---|
| 4/4-in. | 140 | 120 | 60 |
| 6/4-in. | 143 | 122 | 67 |
| 8/4-in. | 150 | 125 | 70 |

### APPALACHIAN HARDWOODS

**F.O.B. mills—Johnson City, Tennessee area—estimate of present FOB Appalachian mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade of hand-sawn Appalachian hardwood in carload quantity, random widths & lengths, rough, air dried & graded in accordance with**

*(Continued on page 62).*


**PTI *offers the . . .***

# First Really NEW Wood Boring Bit *in 100 Years!*

New
PTI
BIT
Patents Pending
2 Piece Construction
Cutter, without ring, that has ample material for numerous sharpening.
Detached cutting ring that can be sharpened on grinding wheel.

**Sharpens Easier—Cuts Cleaner—Stays Sharp Longer**

Here is a Bit of revolutionary new design that offers many important advantages. Its unique feature is a quick-locking detachable ring that slips over the cutter. This design enables both parts, ring and cutter, to be sharpened separately with a grinding wheel. As a result, both parts can be made of a harder material than for sharpening to be done by filing. This means the PTI Bit will stay sharp longer, have a longer life, cut cleaner without tearing or splitting wood. Wide open space between cutting edges eliminates choking with chips and chip breaker breaks up shavings.

Wood can be drilled at any angle regardless of grain.

Self-sealing makes possible drilling of any arc of a circle.

*Send coupon today for circular giving full specifications, sizes and prices.*

**PTI**
***Incorporated***
401 Broadway
New York 13, N. Y.

*Preston PTI Sales and Service, Preston, Ontario, Canada*

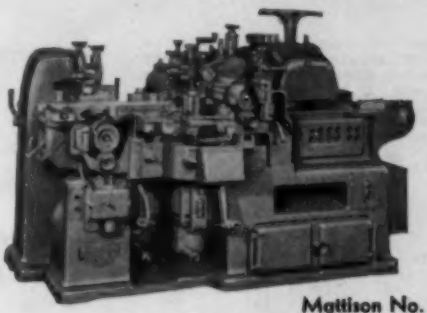
PTI Incorporated, 401 Broadway
New York 13, N. Y.
Please send circular giving sizes, prices and full details on the new PTI Wood Boring Bit.

Name _____
Address _____
City _____ Zone _____ State _____

# FOR YOUR MACHINE ROOM YOU WANT THE *Latest*

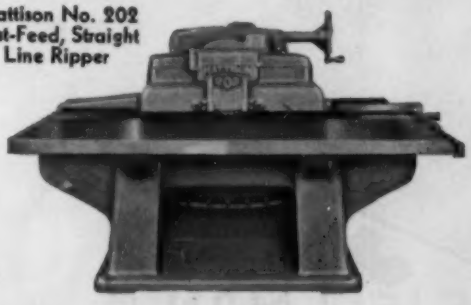
To be out in front you will want the newest and latest equipment for your machine room. The best will be none too good. We will be glad to show you what Modern Mattison Machines can mean to you in terms of greater volume, reduced costs, and better and more accurate work. As the first step write for new free circulars.

*Write Today for Free Circulars*



Mattison No. 276
Electric Moulder

Mattison No. 202
Fast-Feed, Straight
Line Ripper



Mattison No. 57F
Automatic Shaping Lathe

Mattison Machine Works, Rockford, Illinois
Please sent for Circulars on: Moulders.....Rip Saw.....
Turning Lathes.....Sanders—Power Stroke.....Hand
Lever.....Hand Block.....Variety.....Edge.....

Name.....Title.....
Firm.....
Street.....
City.....State.....

**MATTISON MACHINE WORKS**
ROCKFORD · ILLINOIS

(Continued from page 60)

**NHLA rules of inspection. Prices in dollars per M', on straight cars of upper bracket grades, premiums are frequently being paid. Basis selected for the purpose of indicating transportation costs to principal consuming markets from Johnson City, Tennessee area.**

**TOUGH ASH**

| | FAS | FIF | No. 1C | No. 2C |
|---|---|---|---|---|
| 4/4-in. | 160 | 150 | 110 | 67 |
| 6/4-in. | 180 | 170 | 122 | 72 |
| 8/4-in. | 190 | 180 | 147 | 85 |

**BASSWOOD**

| | | | | No. 2A |
|---|---|---|---|---|
| 4/4-in. | 180 | 170 | 130 | 84 |
| 6/4-in. | 190 | 180 | 137 | 94 |
| 8/4-in. | 195 | 185 | 147 | 96 |

**BEECH**

| | | | | No. 2C |
|---|---|---|---|---|
| 4/4-in. | 145 | 135 | 110 | 75 |
| 6/4-in. | 160 | 150 | 120 | 75 |
| 8/4-in. | 170 | 160 | 130 | 80 |

**BIRCH**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 205 | 195 | 140 | 80 |
| 6/4-in. | 220 | 210 | 150 | 85 |
| 8/4-in. | 230 | 220 | 155 | 90 |

**BUCKEYE**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 135 | 125 | 100 | 65 |
| 6/4-in. | 160 | 150 | 115 | 73 |
| 8/4-in. | 165 | 155 | 120 | 78 |

**CHERRY**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 220 | 210 | 150 | 90 |
| 6/4-in. | 240 | 230 | 170 | 95 |
| 8/4-in. | 250 | 240 | 180 | 100 |

**CHESTNUT**

| | FAS | No. 1C | FAS WHND | 1C & B WHND |
|---|---|---|---|---|
| 4/4-in. | 165 | 115 | 135 | 125 |
| 6/4-in. | 170 | 120 | 140 | 130 |
| 8/4-in. | 175 | 125 | 150 | 140 |

**HICKORY**

| | FAS | FIF | No. 1C | No. 2C |
|---|---|---|---|---|
| 4/4-in. | 125 | 115 | 78 | 53 |
| 6/4-in. | 145 | 125 | 86 | 58 |
| 8/4-in. | 165 | 155 | 90 | 60 |

**HARD MAPLE**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 190 | 180 | 125 | 80 |
| 6/4-in. | 200 | 190 | 135 | 84 |
| 8/4-in. | 205 | 195 | 145 | 90 |

**SOFT MAPLE**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 160 | 150 | 115 | 67 |
| 6/4-in. | 170 | 160 | 125 | 69 |
| 8/4-in. | 175 | 165 | 130 | 72 |

**RED OAK—PLAIN**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 185 | 175 | 120 | |
| 6/4-in. | 200 | 190 | 135 | |
| 8/4-in. | 215 | 205 | 145 | |

**WHITE OAK—PLAIN**

| | | | | |
|---|---|---|---|---|
| 4/4-in. | 200 | 190 | 125 | |
| 6/4-in. | 220 | 210 | 145 | |
| 8/4-in. | 225 | 215 | 155 | |

**WHITE OAK—WHND**

| | FAS | FIF | C & B | No. 1C |
|---|---|---|---|---|
| 4/4-in. | 115 | 105 | 90 | 85 |
| 6/4-in. | 140 | 130 | 120 | 110 |
| 8/4-in. | 150 | 140 | 125 | 115 |

**YELLOW POPLAR—PLAIN**

| | FAS | FIF | No. 1C | No. 2A |
|---|---|---|---|---|
| 4/4-in. | 210 | 200 | 140 | 88 |
| 6/4-in. | 220 | 210 | 150 | 93 |
| 8/4-in. | 230 | 220 | 160 | .. |

**POPLAR SQUARES**

| | FAS | No. 1C & SD |
|---|---|---|
| 4x4-in. | 245 | 175 |
| 6x6-in. | 280 | 190 |
| 8x8-in. | 340 | 240 |

**WALNUT—STEAM TREATED**

| | FAS 6' & up | FIF 6' & up | No. 1C | No. 2C |
|---|---|---|---|---|
| 4/4-in. | 350 | 305 | 185 | 80 |
| 6/4-in. | 370 | 325 | 210 | 95 |
| 8/4-in. | 385 | 340 | 235 | 100 |

Walnut list reflects average fob mill, all areas. Basing point not generally observed.

## NORTHERN HARDWOODS

**Estimate of present FOB Wausau, Wisconsin mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Northern hardwoods in carload quantities random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'.* On straight cars of upper bracket grades, premiums are frequently being paid.**

**BROWN ASH**

| | FAS | No. 1C | No. 2C |
|---|---|---|---|
| 4/4-in. | 145 | 105 | 72 |
| 6/4-in. | 155 | 120 | 82 |
| 8/4-in. | 160 | 130 | 88 |

**BASSWOOD**

| | | | |
|---|---|---|---|
| 4/4-in. | 180 | 135 | 78 |
| 6/4-in. | 190 | 135 | 88 |
| 8/4-in. | 195 | 145 | 96 |

**BEECH**

| | | | |
|---|---|---|---|
| 4/4-in. | 145 | 100 | 68 |
| 6/4-in. | 160 | 115 | 78 |
| 8/4-in. | 165 | 120 | 80 |

**BIRCH**

| | | | |
|---|---|---|---|
| 4/4-in. | 265 | 145 | 80 |
| 6/4-in. | 275 | 160 | 90 |
| 8/4-in. | 280 | 175 | 100 |

**ROCK ELM**

| | | | |
|---|---|---|---|
| 4/4-in. | 135 | 115 | 65 |
| 6/4-in. | 145 | 125 | 75 |
| 8/4-in. | 150 | 135 | 80 |

**SOFT ELM**

| | | | |
|---|---|---|---|
| 4/4-in. | 125 | 105 | 71 |
| 6/4-in. | 135 | 115 | 81 |
| 8/4-in. | 140 | 120 | 86 |

**HARD MAPLE**

| | | | |
|---|---|---|---|
| 4/4-in. | 190 | 130 | 78 |
| 6/4-in. | 200 | 140 | 81 |
| 8/4-in. | 205 | 145 | 82 |

**SOFT MAPLE**

| | | | |
|---|---|---|---|
| 4/4-in. | 155 | 120 | 72 |
| 6/4-in. | 170 | 130 | 82 |
| 8/4-in. | 185 | 140 | 90 |

**RED OAK**

| | | | |
|---|---|---|---|
| 4/4-in. | 175 | 125 | 77 |
| 6/4-in. | 185 | 145 | 82 |
| 8/4-in. | 195 | 155 | 85 |

*Air dried Northern Hardwoods are no longer available and sales presently being made cover green stock or stock only partially seasoned. Orders are being placed for stock to be cut and shipped green when accumulated.

accurate hi-pressure
plus
controlled platen heat

All types immediately available. Complete service, parts and engineering as near as your phone. Call or write us now for detailed information.

Fjellman Hydraulic Veneer Presses are the high standard for the woodworking industry. Internationally known for precision craftsmanship, these rugged presses bring new economy to American plywood processors—price and production-wise. Side or end loading; use high or low pressure steam. No special footings for 1 to 5 opening presses. Complete range of sizes from 12" x 12" to 8' x 19' and openings from 1 to 20.

Fjellman presses are steel-frame construction for greatest rigidity, minimum yield, and light floor loading.

Platens are of Swedish firebox carbon steel, polished and ground for fine product finish. Parallel guides insure accurate closing and alignment under pressures to 2000 PSI.

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Fjellman & Winther Company.

312 HENDERSON AVENUE PHONE 3-9112 JOLIET, ILLINOIS

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It conforms to any shape—fits snugly and prevents shifting within the outer container. KIMPAK is economical, too—particularly the new low-cost Type 300 designed especially for the furniture industry.

Try it soon. Like the Drexel Furniture Company, you'll find KIMPAK provides *custom protection* . . . and prevents shipping damage as no other packaging method known.

For complete information, write to Dept. G-6, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

*T. M. REG. U. S. & FOREIGN COUNTRIES

## Metallizing

*(Continued from page 40)*

subsequent cooling. The inevitable result is a highly stressed metal deposit which may crack over curved or irregular surfaces or, when applied to a flat surface, may contract and separate or lift from the base.

Tendency to crack, warp or lift can be avoided within certain limits by increasng the distance between the gun nozzle and the work. Although this will result usually in better metal particle dispersion, it may also result in a weak, porous metal deposit if carried too far. This is because the ratio of solid to liquid particles increases as the distance increases, and when the distance becomes too great, the deposit consists largely of weakly bonded globules and the metallizing coating will be extremely porous, due to the inability of the solid particles to flow into the openings of the preceding layer.

Particle concentration or dispersion in the spray stream will vary considerably with different metals, depending largely on gases formed in the molten metal as it leaves the melted surface of the wire tip. For example, the spray stream is wider with high carbon steel than with low carbon steel or iron, and the metal concentration in the spray stream is lower to produce a metal deposit of less contraction, in spite of a slight difference in the thermal expansion of the two metals. This is caused by a rapid sub-surface formation of $CO_2$ gas, which seems to literally blow the metal apart.

There have been many different tests devised to determine the contraction characteristics of various metallizing sprayed coatings. One of these developed by the Metallizing Engineering Company of Long Island City, N. Y., employs a thin strip of brass (A) clamped between the ends of two members (B), one of which pivoted at (C). A coil spring (D) maintained a light tension on the brass strip, and the expansion and contraction of the strip actuated the indicator (E). The two longitudinal members of the test apparatus were insulated from one another, and low voltage, high amperage current was fed into these members at (F), and passed through the brass strip. The current was controlled by means of a rheostat, thus making it possible to expand the strip any desired amount.

### Test Conditions

To make the tests, the brass strip was first sand blasted on both sides, and then annealed and flattened before being clamped in place in the testing apparatus. The indicator was set at zero and sufficient current was provided to expand the strip an amount equal to the expected contraction of the sprayed metal to be tested. The strip was then sprayed, alternating from one side to the other, and the dial reading maintained by increasing the current during the spraying. After an .020 to .025-inch deposit of metal had been applied to each side, the current was shut off and the strip allowed to cool. These tests were repeated until the dial returned to exact zero after cooling. The expansion of the strip necessary to produce a final reading of zero was taken to be the normal, unrestrained contraction for the metal being tested.

During the course of these tests it was discovered that the elongation of sprayed metal in tension is relatively low (about .3 to .5%) but nearly equal for all hard alloy metals. This would seem to indicate that a knowledge of the relative contraction values of the different metals should prove most useful in the process of metallizing on wood.

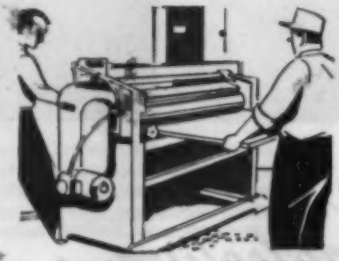

# CELLUMENT

**...The Amazing**
**UREA-RESIN ADHESIVE**
**for HOT or COLD GLUING**

THE ALL-PURPOSE qualities of Cellument make it the perfect adhesive for a wide variety of applications. It works equally well for hot press (including electronic) and cold bonding on a wide variety of materials.*

CELLUMENT comes to you as a DRY powder with incorporated catalyst ready to be dissolved in water. (You don't pay transportation on water. Dry Cellument can be stored longer in less space.) It dissolves in water instantly, sets quickly and spreads fast and easily with mechanical spreader or by hand. Extenders may be added. Hot press bonds with unextended Cellument are strong, fungus and water resistant.

**It is excellent for gluing any make of plastic to wood. For instance, the Buckstaff Company recommends it for gluing their resylite to plywood.*



Spreads equally well by hand or mechanical spreader.

Ideal for cold bonding or hot press including high frequency.

***CELLUMENT** is another MONITE product formulated especially for industry. Behind it stands 35 years of research and development.*

Write TODAY for FREE SAMPLE for test in your plant.

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"The First Pair of Skis", by H. L. Prestholdt, Pres.

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yields well
finishes well

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**DRY KILNS**—20 Tracks of Latest Moore Design Capacity 1 million feet per charge.

**DRY SHEDS**—Ample storage Adjacent to Carline Means Dry Lumber for you.

**DRY LOADING DOCK**—Can Load 19 Cars Under Roof. Assures you quick Shipment Regardless of Weather.

***THERE IS NEVER A LET DOWN IN OUR QUALITY-PRECISION MANUFACTURE***

The Ralph L. **SMITH** Lumber Company

**ANDERSON,** WESTERN PINE ASSOCIATION **CALIF.**

***Mills: Anderson & Canby, California***
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***Write today or see your local American dealer for detailed specifications. Tell us your type of lumbering operations and we will recommend the best units for your needs.***

**AMERICAN SAW MILL MACHINERY COMPANY**
*Quality Saw Mill Equipment Since 1903*
206 MAIN STREET HACKETTSTOWN, NEW JERSEY


# PATENT DIGEST

**by Royden C. Rinker**

### Sheet Wood

W. C. Goss (to United States Sheetwood). U. S. 2,581,652, Jan. 8. Producing a bonding agent by grinding rotted wood, passing this together with wood chips through a fiberizing machine, forming, and pressing with a steam-heated press.

### Composite Products

E. G. Hallonquist (to Plywood Research Foundation). U. S. 2,581,654 Jan. 8. Production of lignocellulose products by exposing raw lignocellulose to pressured steam to soften the fibers and render the mass more susceptible to defibering, reducing the mass, forming, and consolidating under heat and pressure.

### Logging Tongs

S. Kramer. U. S. 2,581,799, Jan. 8. Log engaging device comprising a pair of contronting hook members each enclosing an elongated shank and an in-turned bill on each end thereof.

### Woodworking Machine

D. L. Fair. U. S. 2,581,947, Jan. 8. An end-matching machine of the type wherein a belt-like endless chain is provided with pusher dogs which engage the side of a board to be matched adjacent the end thereof.

### Plywood Containers

O. Rasor, U. S. 2,582,065. Jan. 8. Cutting sheets of wood veneer obliquely across the width to form rhomboidal sections, cutting through the width to form rectangular sections, arranging and laminating the rectangular sections in abutting relationship along the edges representing the longitudinal dimensions of the tubing and wrapping to form tubing.

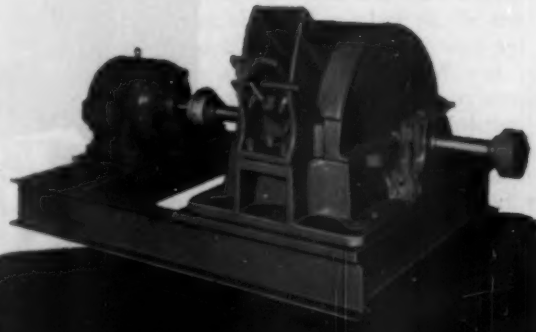
### Woodfinishing

L. H. Jones (to E. L. Bruce). U. S. 2,582,438, Jan. 15. In wood finishing apparatus, a casing forming a tunnel, a conveyor extending through the tunnel, and a series of heating lamps in the tunnel above the conveyor.

### Projection Screen

C. S. Wright (to C. S. Wright and Co.) U. S. 2,579,892, Dec. 25. Weather-resistant screen for outdoor theatres having a smooth image-displaying surface comprising a base of plywood sheeting and a sheet of asbestos secured to a lattice-type frame, and a coated canvas as a face layer.


## M & M hogging equipment



Let M & M Disposal Equipment turn your waste into profits. These machines are built in many types and sizes for slabs, edgings, trim, blocks, veneer, bark, and other combustible waste. Don't overlook the extra dollars that can come from utilizing every available bit of waste. Send us your problem and we'll show you how M & M Disposal Equipment can solve it.

**MITTS & MERRILL**
1018 South Water • SAGINAW, MICHIGAN

### Phonograph Records

J. W. Ayers (to Agra Shell Inc.). U. S. 2,582,740-1. Jan. 15. Phonograph record compositions containing vinyl chloride resin, a synthetic rubber, and a lignocellulosic filler.

### Drag Saw

E. E. Hansen and C. C. Hansen. U. S. 2,583,047, Jan. 22. The combination with a motor-driven vehicle, of a bull dozer pivotally mounted thereon, a horizontal drag-saw adjacent the bulldozer, means for operating the drag saw and the bulldozer to hold a log during the operation of the saw.

### Veneer Clipper

G. Haumann (to Coe Manufacturing). U. S. 2,583,051, Jan. 22. In a high-speed veneer clipper, a rigid frame comprising horizontally spaced vertical side members, a long vertically movable knife supported by the frame, said knife being thin and lightweight relative to the frame, power means for operating the knife, and a feed table for the veneer.

### Black Liquor Recovery

F. W. Hochmuth (to Combustion Engineering Superheater, Inc.). U. S. 2,583,145, Jan. 22. A system for recovering chemical from the black liquor of pulp mills including a boiler heated by combustion gases produced by burning the liquor and a pass wherein pressure is below atmospheric, and evaporator for concentrating the black liquor, a salt cake mixing tank containing a screen, a trough leading to the tank exterior to carry off rejected lumps and partition means dividing the tanks upper interior into two compartments.

### Chain Saw

C. J. Tweedie. U. S. 2,583,243. Jan. 22. Chain saw comprising center links and side links pivotally connected, said center links being formed with a pair of mating side plates, each having an offset portion to provide a rectangular channel adjacent one edge with the channel opening at one side face of the plate.

### Sheet Material

M. W. Baker, F. F. Bell, C. F. Curtis, and E. A. Patton (to Curtis Companies, Inc.). U. S. 2,583,249. Jan. 22. Apparatus for manufacturing boards of compressed cellulose material including a container for receiving granular material to be compressed and a cutting flange around the periphery of the compressing chamber.

### Patch Machine

W. A. Forsyth and W. A. Davis. U. S. 2,583,367, Jan. 22. A patch making machine comprising a frame, a carrier supported thereon for carrying a patch blank having opposite ends to be cut to shape, driven cutters arranged to cut the desired shape.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STANDARD SHAPER COLLARS

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PROMPT SERVICE . . . Bars stocked in all sizes in either standard or notched types for fast delivery.

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*Engineers to the Woodworking Industry*



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*Applies like putty . . . Sticks like glue!*

FAMOWOOD is the answer . . . where wood finishes are important. Simple to use . . . efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions.

FAMOWOOD sands easily, does not gum up sander. *Takes spirit dye stains freely.* Waterproof and weatherproof when properly applied. Ready to use—*"right out of the can."* Fifteen matching wood colors with matchless wood finishes.

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Model RC-1

## Delmhorst Moisture Detector has "paid for itself time and again"

Says Mr. Herbert Seidel
Reisen Hardwood Lumber Co., Union, N.J.

*". . . We use it constantly to check the moisture content of incoming lumber, to select air dry stock from the yard stocks and to check outgoing lumber," writes Mr. Seidel.*

*"In the kiln operation, the Moisture Detector has proved to be a necessity (especially when used with the 26E electrode) for making quick checks on lumber entering the kilns . . . saves the kiln operator hours in starting a new charge in the kiln . . .*

*". . . We know that it has paid for itself time and again in every operation of our business that requires knowledge of lumber moisture content."*

**Some Moisture Detector Advantages**

- Quickly and accurately measures moisture content of any wood product from 6-65% (veneers, lumber, timbers, etc).
- Direct reading in percentages on large 4½ inch dial. No calculations required.
- Ideal for dry kiln testing—wet cores can be tested without cutting lumber.

*Guaranteed for one year. Write for full information.*

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Solid and Glued

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**Superior Machine Work**

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***Building Trade Products***

Mixed cars comprising hardwood flooring in Straight-line standard strip and Unit Wood Blocks in oak, beech, pecan; Random Width Oak Plank — each finished or unfinished. Oak stair treads, risers, thresholds. Arkansas Soft Pine trim, mouldings, finish, yard stock.

*There's a representative in your territory.*

BRADLEY LUMBER COMPANY *of Arkansas*

WARREN, ARKANSAS


# Foreign Woods

**QUARUBA**
***Vochysia (2 species)***
***Vochysiaceae (Vochysia) Family***

Vochysia is a genus closely related to Qualia and its timber may not be distinguised from that of Qualia. Vochysia is widely distributed in both Central and South American tropical areas. It is one of the largest of the Amazonian trees and when it blossoms, the tree is transformed into a gigantic bouquet of yellow flowers. Maximum height may reach 190 feet with diameters up to 6 feet.

The fresh heartwood of QUARUBA varies from light brown to pinkish yellow. It is distinct from the 1½ to 3" whitish or buff sapwood. Dry heartwood is dull pink to pinkish brown. Sometimes it has a golden cast with medium to high lustre. The texture is coarse to medium. The grain is straight or interlocked. When quartered a subdued stripe figure 1 to 2 inches wide is the result.

QUARUBA varies considerably in density with a specific gravity of 0.29 to 0.45, with an average of 0.37 which puts it in the yellow poplar class. QUARUBA has a tendency to misbehave during seasoning but material from Brazil has made better tests than material from Costa Rica.

QUARUBA has been imported experimentally and carefully tested but apparently it has no commercial possibilities.

Other names:

| | |
|---|---|
| Brazil | Cedra-rana (False Cedar) |
| Surinam | Kwarie, Wanek walie |
| British Guiana | Itaballi |
| Nicaragua | Barba chele, Yemeri |
| Mexico | Corpus |
| British Honduras) | |


**Are You Spending Hours to do a 30 Second job**

**Could be . . . unless you're using modern electronic gluing and laminating methods.**

Mann-Russell RF Generator

Mann-Russell Veneer Edge-Gluer

Mann-Russell Lumber Edge-Gluer

**Speed production — cut costs — with Mann - Russell Electronic equipment — generators, patchers, lumber and veneer edge-gluers. All units custom-designed to meet your particular needs and installed by factory-trained experts.**

**If your production calls for gluing up short lengths, edge-gluing hard or soft wood veneers, or other lamination — write today for specific data, outlining your problem.**

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Dept. 20

NORTHWEST SYNDICATE, INC.
1321 A STREET TACOMA 1 WASHINGTON

Nicaragua ) ..... Yemeri
Guatemala)
Honduras ) ..... San Juan
Spanish America ..... Palo de agua
Other woods called QUARUBA:
Erisma sp.
(Quaruba de flores roxas) ..... Brazil
Qualea sp. (Quaruba) ..... Brazil
NOTE: Palo de agua (Tree of Water) refers to the large amount of water in the green wood, weight green 67 pounds per cubic foot, dry 28 pounds. GNL.

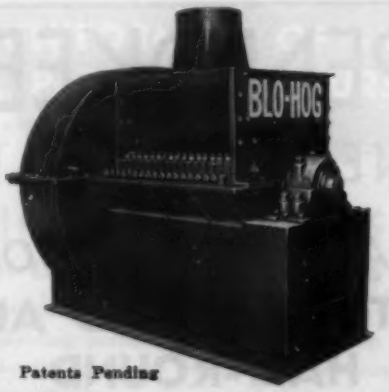
### FLOR AZUL
### *—Vitex kuylenii*
### RAJATE BIEN
### *—Vitex cooperi*
### *Verbenaceae (Vervain) family*

Both of these species are found in southern Mexico, Guatemala, Honduras and British Honduras. The trees are of medium size although occasionally fairly large; maximum diameters run from 20 to 30 inches. Sixty feet is about the maximum height.

The heartwood is tan, yellowish brown to dark brown and becomes gray brown to deep brown on exposure. The sapwood is creamy to grayish brown. The grain is usually straight and only occasionally wavy. The texture is fine to medium and uniform. The wood is of medium density and weight. Sp. gr. 0.47 to 0.56.

The wood is reported as drying very slowly but without serious checking. These two species of Vitex seem to be fairly durable. Both species are easy to work and take a smooth finish. These woods have been imported for experi-

*(Continued on page 70)*


Patents Pending

MONTGOMERY BLO-HOG

**Eats Up Everything**

. . . including Pine, Oak, Gum, Hickory, Elm, Wet Veneer Round-up and Sandy Bark.

Conveyor-fed, no attendant is required to "feed the hog."

Sturdy breaker lugs give absolute protection from major damage caused by tramp steel.

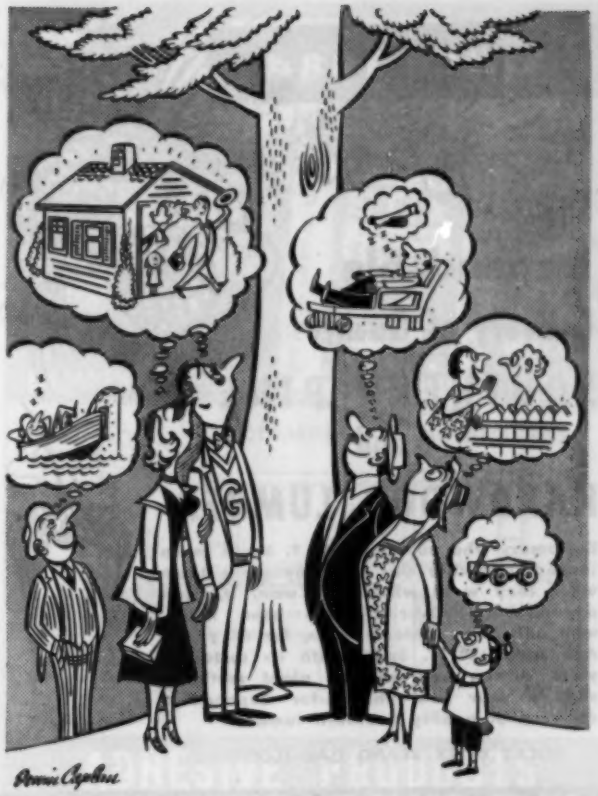
Maintenance costs unbelievably low.

Write for bulletin and details.

**Jacksonville Blow Pipe Co.**

Jacksonville, Florida





"That tree is going to solve a lot of problems"—and our more than 39 years of service is an assurance to Industrial users of Plywood and lumber products of "no problem" where a dependable source of supply is concerned. This should be of real interest to you. For Pine and Fir cut-stock, factory grade Pine, Fir Plywood in standard sizes or cut-to-size, it's PAMUDO!

IF YOU HAVE A WOOD PRODUCTS PROBLEM, CALL

**Pamudo**

(PACIFIC MUTUAL DOOR CO.)

**GENERAL OFFICE • Direct Shipments . . .**
Straight and Mixed Cars.
Lumber and Lumber products . . . Fir and Pine Mouldings, Doors, Plywood and Cut-Stock
Stock Millwork—Cut-to-size Industrial Plywood.

**TACOMA BUILDING, TACOMA 2, WASHINGTON**
Warehouse stocks of
Plywood • Doors
Mouldings • Stock Millwork

WAREHOUSES IN 5 PRINCIPAL CITIES
- St. Paul 4, Minnesota
- Kansas City 5, Kansas
- Chicago 38, Illinois
- Baltimore 31, Maryland
- Elizabeth, New Jersey

SINCE 1884

Dependable
Delivery of Quality
SOUTHERN PINE
and
HARDWOOD LUMBER

Customers who buy from W. T. Smith learn immediately that this company gives them what they want when they want it. Such dependable deliveries have been made, with only minor interruptions, for 68 years. And today W. T. Smith with its sustained yield cutting and efficient plant methods, still is your best choice for dependable delivery of quality Southern lumber.

ROCKY CREEK BRAND OAK FLOORING

W. T. SMITH LUMBER CO.
CHAPMAN ALABAMA
68 YEARS OF MANUFACTURING YELLOW PINE AND HARDWOODS

**FOREIGN WOOD**—*(Continued from page 69)*

mental purposes but it is doubtful that they have a future in the form of either lumber or veneer.

Other names applied to species of Vitex.

| | |
|---|---|
| British West Indies | Black fiddlewood |
| Cuba | Chicharron |
| Mexico | Negro coyote |
| British Honduras | Monkey fiddle |
| Honduras<br>Guatemala | Barabas, Rajate bien |
| Panama | Cuajada |
| Columbia<br>Venezuela | Aceituno |
| Brazil<br>Uruguay<br>Paraguay | Taruma |

### SANGRE
***Pterocarpus vernalis***
***Leguninosae (Pea) family***

Pterocarpus is a genus that produces some very fine cabinet woods in Africa and Asia, among which are Narra, Amboyna, Padouk and Vermillion. The species that grow in Tropical America normally develop little heartwood and, for the most part, are of little commercial importance.

SANGRE is also known as "Sangre de Drago" (blood of the dragon) because of the red juice that flows from the bark of the tree when cut. SANGRE is found in Venezuela where it is prevalent on cut-over abandoned lands. It reaches a height of 90 feet and a diameter of 3 feet.

The heartwood is a light tan when freshly cut but later becomes brownish yellow or whitish yellow. The grain is straight to slightly interlocked. The wood is of medium weight. Sp. gr. averages 0.57.

"OLIVER" No. 399
18-in. SINGLE SURFACER

Unmatched for planing small stock!

Turns out exceptionally smooth, accurate work. One-piece base assures permanent alignment of parts. Heavy ball bearing safety-type cylinder has three high-speed knives. Power driven, roller bearing feed rolls handle 15 to 35 feet a minute. Takes stock up to 18 inches wide, short as 8½ inches when fed singly. Precision built for years of top performance.

*Write for Bulletin No. 399*

OLIVER MACHINERY COMPANY
*Established 1890* GRAND RAPIDS 2, MICHIGAN

PENOKEE
VENEER COMPANY

*MANUFACTURERS OF*
ROTARY, SLICED AND HALF-ROUND
VENEERS
IN
BIRCH—MAPLE—BASS—ASH—
OAK—ELM—WHITE PINE

GENERAL OFFICES
MELLEN, WISCONSIN
P. O. BOX 110
TELETYPE, MELLEN 29—PHONES 205 - 3313

SANGRE is considered rather difficult to season and may develop crook and warpage if seasoning is rapid. It is not considered very durable. It has been imported for experimental purposes but seems to be definitely inferior to some of the other secondary tropical woods.

Other names:

Palo de pollo.....Puerto Rico
Llora, Sangre, Sangregado.....Mexico
Kaway.....British Honduras
Bloodwood.....Panama
Sangregao.....Columbia
Pau sangua.....Brazil

Other woods called SANGRE:

Byrsonima sp. (Sangre de doncella)
(Sangre de vaca).....Cuba
Compsoneura sp. (Sangre).....Honduras
Virola sp. (Palo de Sangre)
.....Guatemala, Honduras, Nicaragua
Maytenus sp. (Sangre de toro).....Cuba
Lyonia sp. (Sangre de toro).....Cuba
Chrysochlamys sp. (Sangre de toro).....Columbia
Ruprechtia sp. (Sangre de toro)....Mexico, Guatemala
Hamelia sp. (Sangre de toro).....Mexico

### Here's a Good Idea for You from a Wood and Wood Products Reader

The other day we were passing the time of day with a subscriber to our magazine. He said he found Wood and Wood Products the most valuable trade paper he bought. He told us he judges a magazine by the number of items he marks for future study. Wood and Wood Products is marked up for study far more than other magazines, he says, because the material is practical. Marking Wood and Wood Products for future study will make your copy more valuable. The editors.

UNIFORMITY OF SASH PATTERN IS YOURS... INDEFINITELY
when you use
SHIMER SASH HEADS
WITH LONG-LIFE CIRCULAR BITS
• you can produce and re-produce sash moulding patterns without a variation —with hundreds of different patterns possible by simply changing mould bits!
Shimer's exclusive ready-moulded circular bits are clearance protected and hold the shape of the sash pattern indefinitely! They're quick, easy to sharpen and designed for all-around clearance cut! Heads are made with expansion feature for wider or narrower square!
For long production runs or short "duplication runs", you'll pocket extra profits when you cut your sash mouldings the economical Shimer way —regardless of the pattern! Let us give you complete information . . . there's a Shimer Cutter Head for every cutting problem!
WRITE FOR YOUR FREE COPY OF OUR ILLUSTRATED PATTERN BOOK!
SAMUEL J. SHIMER & SONS, Inc.
RACE STREET • MILTON, PENNA.
SHIMER

Nickey Bros.' Philippine

# MAHOGANY

For Your Quality Work

**Beautiful Nickey Brothers' Philippine Mahogany is excellent for interiors or external use. Lumber, sliced face veneers or plywood in various thicknesses. Nickey Brothers' Quality Control has meant Dependability in the lumber business for 80 years.**

NICKEY BROTHERS, INC.
MEMPHIS, TENNESSEE

Hardwood Flooring, Treads, Thresholds, Moldings
Cedar Closet Lining, Sliced Face Veneers, Lumber, Plywood

## *Your customers like SIGNODE'S "Packaged" Delivery Method*!*

Broken or badly damaged lumber cuts deeply into your customers' profits. Pilferage en route, or on the building site, is sheer loss. That's why "packaged" lumber shipments—protected by tensioned *Signode steel strapping*—guard both *you* and your customers against loss of profits and good will.

Signode methods of bundling lumber permit mechanical loading of lumber cars and gondolas; speed handling; help meet man power shortage; increase safety of workers, step up unloading; block pilferage; virtually end breakage, save space; simplify inventory taking; build good will.

If you ship raw or finished lumber in any form, ask to have a Signode field man give you the facts about Signode's methods of packaging lumber for delivery. Mail the coupon today.

* TESTED AND APPROVED

**SIGNODE** *STEEL STRAPPING CO.*

**2655 N. Western Ave., Chicago 47, Ill.**

Please have your representative call with the facts about packaging lumber shipments. ☐ Also send us a copy of "Important Ideas For You." ☐

Name.....

Address.....

City.....Zone.....State.....

*this seal* SIGNODE *means security in shipping*

## The "Extra Ingredient" in Permawood

HARDWOOD PLYWOOD

For 34 years, skilled workmen, supervisors, and inspectors have cooperated to bring PERMAWOOD to its present highly regarded position in the industry. This pride of products is the "extra ingredient" in PERMAWOOD Hardwood Plywood.

***Panels get high polish and correct thickness in Darlington's Drum and Belt Sanders.***

We make PERMAWOOD panels in standard sizes, all veneer construction from 3/20" to 1-1/16" thick, and in lumber core construction in 3/4" and 13/16" thickness. Widths from 30" to 48"; lengths from 36" to 96". Write for latest stock lists and prices.

**DARLINGTON VENEER CO., INC.**
***Established in 1918***
**DARLINGTON, SOUTH CAROLINA**

## "A BUCK WELL SPENT"...ON MEYERCORD DECALS

**SPRINGS MILLS CREATES NOVEL PROMOTION WITH SPRINGMAID CUTIE DECALS!**

Full-color Decals of luscious Springmaid girls featured in Springs Mills' national ads are a fast moving, self liquidating premium at 25c for a set of six to decorate glasses! For special promotions *and* to add new sales appeal to your products—investigate versatile low-cost Meyercord Decals now!

*Send 25c for complete set of 6 Springmaid Cuties—each different!*

**FREE!**

Idea-packed, full color Catalog comes with or *without* Cuties. Dept. 31-6

**THE MEYERCORD CO. • CHICAGO 44 • ILLINOIS**

# Names... Events

### Personnel Changes

WERNER R. GULLANDER, who was with the GENERAL ELECTRIC CO. for 22 years, has been named Financial Vice-President of the WEYERHAEUSER TIMBER CO. He succeeds DAVID GRAHAM, who resigned to become Financial Vice-President of Standard Oil Co. of Indiana.

MANTON R. FRIERSON, JR., who was information and education forester for the FLORIDA FOREST SERVICE, has been appointed Conservation Forester for the Charleston, S. C. mill of the WEST VIRGINIA PULP AND PAPER CO.

DR. E. S. HARRAR, Wood Technologist, of DUKE UNIVERSITY, is on a six-month sabbatical leave to study hardwood veneer log grades in the Southeast for the SOUTHEASTERN FOREST EXPERIMENT STATION.

STEPHEN J. HALL, of Seattle, Wash., has been named Director in Charge of Industrial Relations in all of the SIMPSON LOGGING COMPANY'S operations.

HARRY E. MURPHY has severed his connections with the TENNESSEE VALLEY AUTHORITY to become a partner in the SOUTHERN TIMBER MANAGEMENT SERVICE of Birmingham, Ala., with a field office in Sheffield, Ala.

FRED H. BRUNDAGE, Chief Forester for the HARBOR PLYWOOD CORP. of Aberdeen, Wash., has been appointed a member of the Oregon State Board of Forestry.

IRVIN H. LUITEN has been named Oregon Field Representative for the WEYERHAEUSER TIMBER COMPANY'S Department of Public Information, with offices in Portland, Ore.

KARL A. SWENNING has been appointed General Woods Manager of the HOLLINGSWORTH & WHITNEY CO., Boston, Mass.

JOHN C. CLAY has been appointed Director of the Containers and Packaging Division of the NATIONAL PRODUCTION AUTHORITY. He is on leave as Assistant to the Executive Vice-President of NATIONAL STARCH PRODUCTS, INC., New York City.

CHARLES MUNGER, JR. has been named Factory Sales Representative for THE LONG-BELL LUMBER CO., Longview, Wash., in the eastern seaboard area.

F. T. WHITED, JR. and R. T. MOORE of Shreveport, La., were elected Directors of OLIN INDUSTRIES, INC. Mr. Whited was President of FROST INDUSTRIES, INC. at the time that company's assets were acquired by OLIN INDUSTRIES, and Mr. Moore was a Director of Frost at that time.

C. E. JUTKINS has been appointed Superintendent of the Woodward, Ala. plant, Tar Products Division of the KOPPERS CO., INC., Pittsburgh, Pa.

PIERRE MICHEL PASQUIER has been named Assistant to the President of the M and M WOODWORKING CO., Portland, Ore.

L. W. STAPLES has been appointed General Production Manager of the 12 KROEHLER MANUFACTURING CO. furniture factories. He was formerly Vice-President and General Manager of the SUGAR BEET PRODUCTS CO., Saginaw, Mich. His headquarters will be at the company executive offices in Naperville, Ill.

DONALD E. CURTICE, Superintendent of the AMERICAN LUMBER & TREATING CO. plant at Port Newark, N. J., has been appointed General Superintendent of Plants, and will make his headquarters at the general offices of the company in Chicago.

*(Continued on Page 74)*

**Any operator can make and maintain these precision knives to uniformly close tolerances with this simplified**

**REDCO PROFILE GRINDER**

HERE'S a fact for every furniture and wood working plant that's looking for an "old time", highly skilled, tool grinder.

*Stop looking* and get a REDCO Profile Grinder!

Using a REDCO Profile Grinder, any operator, after a few days training at REDCO, can accurately and uniformly make and sharpen high speed steel and carbide tipped profile cutters for shapers, molders and similar tools. And remember, a regular, on-schedule, sharpening of these tools *in your own plant*, will cut time and material waste . . . and boost production!

Attachments for sharpening REDCO carbide tipped saws, router bits and straight knife cutters can be supplied.

**Get the complete story on the REDCO Profile Grinder. Write today for the free fact-full, REDCO bulletin.**

REDCO TOOL DIVISION
Red Lion Cabinet Co.

Please send me a copy of the REDCO Profile Grinder illustrated bulletin.

Name _____ Title _____

Company _____

Address _____

## NAMES . . . EVENTS

*(Continued from page 73)*

W. KEITH FRIEND is named Product Manager of the special division, and DONALD M. DONKER becomes Superintendent of the transportation seating division of THE AMERICAN SEATING CO.

E. H. EMBRY has been elected Chairman of the Board of GENERAL BOX COMPANY. J. A. CRAGWALL, Vice-President and Manager of the Kansas City Division, has been elected President.

HENRY VETTEL, Technical Director of the PROTEXOL CORPORATION, Kenilworth, N. J., has been appointed Vice-President in Charge of Research and Production.

WELLS H. TEACHNOR, JR. has been appointed Sales Representative for the FRANKLIN GLUE CO., to service industrial glue users in the New York City and New Jersey areas.

J. D. HALBACH is named Manager of the CHICAGO MILL & LUMBER CO. plant in Tallulah, La. R. N. WARE took over the duties of Vice-President of the company and for the immediate future will retain an office in Tallulah.

S. REXFORD BLACK has been advanced to Senior Vice-President and ROBERT B. PAMPLIN to Vice-President in Charge of Administration of the GEORGIA PACIFIC PLYWOOD CO. STEWART W. WHITE is elected Vice-President in Charge of Plywood and Door Sales.

GARVIN A. DREW has been appointed Assistant Vice-President of the SCOVILL MANUFACTURING CO., INC., with respect to the affairs of the SCHRADER DIVISION. He will continue in his capacity as General Sales Manager and also serve as a member of the Schrader Division Executive Committee and the Board of Managers.

DR. HENRY SCHMITZ, Dean of Agriculture and Forestry at the University of Minnesota, was named President of the University of Washington.

### *New Firms*

The MONTICELLO HARDWOOD FLOORING CO. has been organized in Monticello, Ky., with a capital of $150,000. C. B. TWYFORD, J. K. PHILLIPS and JAMES M. CHESNEY are the incorporators. Mr. Twyford will be manager of the plant.

MOBLEY LUMBER CO., Batesville, Ark., is the name of a new lumber milling plant now in operation. The

*(Continued on page 76)*


# DIMENSION STOCK

SOLID • GLUED UP • MACHINED TO SPECIFICATIONS

MAPLE BIRCH BEECH

Kiln Dried Dimension Stock
Plain S2S—Machined—Turned
Solid and Glued Up

MICHIGAN DIMENSION CO.

General Office: 666 Lake Shore Drive, Chicago 11, Illinois
Factory: Manistique, Michigan

**Dimension and Lumber for Every Need**
**AD or KD Hardwood or Softwood**
**100% CLEAR OUR SPECIALTY**

Milpac-Bed Rails-core stock-furniture parts & squares
Hickory and Ash tool handle blanks, handles and dowels.

**Germain Lumber Corporation**
**MONTGOMERY 1, ALA.**
Phones: 4-2481 * 4-2482 * 4-2483 After 5 P.M.: 2-1410 or 2-568.

LUMBER CORES
and
Glued-up Furniture Dimension
Precision kiln-drying and machining
Specializing in Gum and Poplar
Other species avaliable

**THE PILLIOD LUMBER PRODUCTS CO.**
**FLORA, MISSISSIPPI**

**Carlton Smith Industries, Inc.**

**Glued-Up Furniture Dimension**

**P. O. Box 326 Phone 23**

**Bearden, Arkansas**

**Join the long list of Satisfied Customers using Bagnal's finished and semi-finished solid and glued-up dimension stock, laminated bed rails, drawer sides and backs, squares etc.**

***L. N. BAGNAL***

**Phone 8115 P. O. Box 2896**
**Winston-Salem 1, N. C.**

***Here's the place to list your Dimension Stock and sell it quickly. Send us your copy and you will be surprised at the very nominal cost of this space***

Penwood
PLYWOODS
Hardwood Plywoods for Quality Trade

*THE ARISTOCRATS IN*

**BIRCH—MAPLE—RED OAK—**
**WHITE OAK—ASH—BASSWOOD**
**—ELM—WALNUT—MAHOGANY**

# PLYWOODS

## SPLICEDWOOD CORPORATION

MELLEN, WISCONSIN
P. O. BOX 110
TELETYPE, MELLEN 29—PHONES 205 - 3313



# WILLOW

**IS FEATURED IN '52**

**FOR**
**FURNITURE**
**CABINETS**
**PANELING**
**CASKETS**
**CORES**

Our three mills are located in the Mississippi, Atchafalaya and Red River basins of Louisiana which produce the finest Willow in America.

Large and well assorted stocks of this fine willow are ready for immediate mill shipments at all times. We can meet your exact needs, all thicknesses and grades 4/4" to 8/4" or include in mixed cars with Port Barre white ash and other Southern Hardwoods. Prompt attention will be given to all inquiries.

**The Port Barre Lumber Industries, Inc.**
Manufacturers of Southern Hardwoods
Port Barre, La.

**CARBIDE TIPPED SAW BLADES**

with any others and you'll agree they're outstanding. Cut with equal ease thru plywood, laminated wood, teak, fireproof lumber, linoleum, plastics etc. Huther Quality in Carbide Saws is a "standard" among leading craftsmen.

*Write for folder*

**HUTHER BROS. SAW MFG. CO., INC.**
1290 University Ave. • Rochester 7, N. Y.
SAW MAKERS FOR OVER 65 YEARS

*Tannewitz*
**HIGH SPEED BAND SAWS**

Saws faster, smoother and easier than conventional band saws. Regularly increase production from 50% to 100% with consequent reduction of costs. Built by sawing machinery specialists. Write for circular.

**THE TANNEWITZ WORKS**
GRAND RAPIDS 4, MICHIGAN

# HOW TO GET THE MOST FOR YOUR MONEY!

**JUST MECHANIZE your materials handling operations by using CLARK EQUIPMENT. It's as simple as that.**

● That's what they all say? Perhaps. But CLARK backs up *its* claim with facts and unmatched performance.

On the questions of . . .

√ Quality, Longevity
√ Customer Satisfaction
√ Number of Trucks in Use
√ Efficiency and Performance
√ Economy of Operation and Maintenance
√ Factory and On-The-Ground Service
√ Savings Achieved

. . . there is at hand—and available to you—overwhelming evidence that CLARK Serves You Right!

The whys and wherefores are available to you in two new media—the "SERVES YOU RIGHT" edition of our Material Handling News, and our new movie on the use of fork-lift trucks and industrial towing tractors in Plant Maintenance Work.

They'll tell you and show you how CLARK enables you to get the MOST for your money. Just fill out the coupon, attach to your business letterhead and place in your "out-going" mail basket.

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ELECTRIC AND GAS POWERED
FORK TRUCKS
AND POWERED HAND TRUCKS
INDUSTRIAL TOWING TRACTORS

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Please send the items checked . . .
☐ Material Handling News
☐ Movie "Serves You Right"

Name_____
Firm Name_____
Street_____
City_____ Zone____ State____


## NAMES . . . EVENTS

*(Continued from page 74)*

new company is owned by F. F. MOBLEY and his son F K. MOBLEY.

GREAT SOUTHERN Box Co., New Orleans, La., has leased a new $500,000 box plant at Lucedale, Miss., for the manufacture of wirebound containers.

UNITED CRATE and BOX CORP., Greenwood, Miss., is a new concern established for the purpose of manufacturing ammunition boxes.

DIXIE SHOOK and Box Co., Crystal Springs, Miss., has been granted a charter of incorporation with a capital stock of $100,000.

BOBCAW Box Co., Stamps, Ark., is a new concern that expects to begin operations soon with the manufacture of boxes for nearby ordnance plants.

WALNUT PRODUCTS, INC., Gentry, Ark., has recently incorporated with THOMAS ROE, D. W. DUNCAN, B. J. DUNCAN and JOHN C. DUNCAN as incorporators.

DESIRE FURNITURE CO., INC., Hammond, La., has been organized with a capital stock of $100,000.

ALBANY BOX & CRATE COMPANY, INC. was recently organized in Albany, N. Y. with a capital stock of $150,000.

### Mergers

The AMIDON LUMBER COMPANY of Brockway, Penn., composed of OTTO M. AMIDON *and* L. L. AMIDON, has sold its complete stock of lumber and dimension and good will to the MID-PENN LUMBER COMPANY of Curwensville, Penn.

### Associations

SOUTHERN PINE ASSOCIATION elected the following officers at the recent Annual Convention in New Orleans: J. R. BEMIS, Prescott, Ark. elected President for the ensuing year. TOM DEWEESE, Philadelphia, Miss. named First Vice-President. R. D. CROWELL, JR., Long Leaf, La., Second Vice-President. M. L. FLEISHEL, Port St. Joe, Fla., Treasurer and H. C. BERCKES, Secretary-Manager.

S. L. FROST announced his resignation as Executive Director of the AMERICAN FORESTRY ASSOCIATION, effective immediately. DON P. JOHNSTON, President, heads a committee that will name his successor at a later date.

*(Continued on page 77)*


*Importers of*
**GENUINE MAHOGANY**

*Wholesalers of*

BAND SAWN
**PONDEROSA & SUGAR PINE**
*SOFT TEXTURED*
*BIG MILL HIGH ALTITUDE STOCK*

**CALIFORNIA REDWOOD**
*BAND SAWN HUMBOLDT BAY*

We Maintain a
West Coast Buying Office

DON B. WALLACE INC.
Guardian Building
Detroit, Michigan

AAA
TM. REG. U.S. PAT. OFF.
ATKINS
"ATKINS ALWAYS AHEAD"

For Lower-Cost Cutting . . . In Greater Volume

ATKINS
*Silver Steel*

- CIRCULAR SAWS
- BAND SAWS
- PLANER KNIVES

*Call Your*
**ATKINS DISTRIBUTOR**

## NAMES . . . EVENTS

*(Continued from page 76)*

INDUSTRIAL FORESTRY ASSOCIATION is the new name of the JOINT COMMITTEE on FOREST CONSERVATION of the PACIFIC NORTHWEST LOGGERS' ASSOCIATION and WEST COAST LUMBERMEN'S ASSOCIATION. The new title became effective May 1, according to E. P. STAMM, Portland, President of the group.

H. E. BRINCKERHOFF, Executive Secretary-Treasurer of the AMERICAN PULPWOOD ASSOCIATION, announces that he has stepped down as acting head of the Association, with his formal retirement slated for July. W. S. BROMLEY, APA Forest Engineer, will assume the active duties of the Secretary-Treasurer and on the 1st of July will succeed Mr. Brinckerhoff as head of the Association.

NATIONAL HARDWOOD LUMBER ASSOCIATION, Chicago, Ill., will hold its 55th Annual Convention, September 23-25, 1952, in the Hotel Statler, Boston, Mass.

SOUTHERN BOX and CRATE ASSOCIATION elected the following officers at its 14th Annual Meeting held recently in Shreveport, La.: R. B. MALCOLM, JR., Dierks Lumber and Coal Co., DeQueen, Ark., President; T. W. BUTLER, Butler Box Co., Rusk, Texas, Vice-President; R. P. WISSING, Frost Lumber Industries, Shreveport, La., Treasurer, and HEBER E. LONG, Shreveport, La., Secretary-Manager.

### *Expansions*

CINCINNATI SASH and DOOR CO., Cincinnati, Ohio, has announced that it will build a plant on Reading Road, near the Norfolk Railroad.

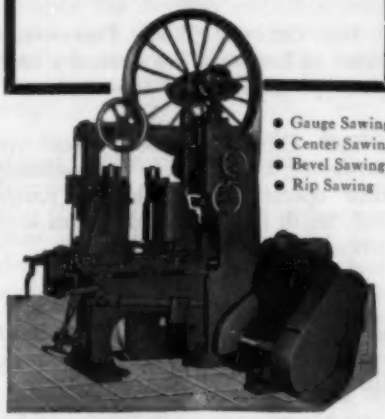
ST. FRANCIS KITCHENS, INC., makers of kitchen cabinets which are all wood units, purchased the LENTZ TABLE CO. of Nashville, Mich., which had been closed for several years.

OHIO KNIFE CO. of Cincinnati, Ohio, is adding 30,000 square feet of production space to its present manufacturing plant. This current building program is the fourth major expansion made by the company in the last ten years.

The National Production Authority has approved the construction of two plywood plants: LONG-BELL LUMBER Co., Gardiner, Ore., with an estimated investment of more than two million dollars; COQUILLE PLYWOOD, INC., Coquille, Ore., estimated to cost over a million and a half dollars.

*(Continued on page 78)*

**RESAW 1/10" STRIPS**
**and other precision jobs with the**
**McDONOUGH 44"**
**Vertical Band Resaw**



- Gauge Sawing
- Center Sawing
- Bevel Sawing
- Rip Sawing

**FOR PRECISION RESAWING** select the McDonough 44" Vertical Band Resaw. Narrow kerf . . . independently adjusted feed rolls . . . knife edge sensitive saw strain—these and other McDonough features provide accuracy equal to the most demanding job.

*Write for Complete Information on the McDonough 44" . . .* TODAY!

**McDONOUGH MFG. CO.**
**1504 GALLOWAY, EAU CLAIRE, WISCONSIN**
*World's Largest Producer of Vertical Band Resaws*

**VIRGESON'S**
ONE STOP
**SERVICE**

***SPECIALS***

Appalachian Oak Drawer Sides
Southern Oak Drawer Sides
Gum Bed Rails Edge Glued, Moulded to Pattern

INQUIRIES WELCOME

**JOE VIRGESON**
**LUMBER CO., INC.**
COLUMBIA, SOUTH CAROLINA
P. O. Box 744, Phones 5165-5166

plywood

From the world-famous forest resources of Finland, imported all-birch plywood—sizes up to 4' x 6', all thicknesses...cut to buyer's specifications. Also molded plywood chair seats and backs in standard sizes and shapes and to your specification; all-birch 3/4" 13-ply laminates for cabinet doors, table tops, etc.; lumber core for table tops; door panels of birch plywood (1/8" 3-ply).

*Dependable deliveries from Finland's oldest plywood source. Quotations submitted —your inquiries invited.*

**FINWOOD**
INDUSTRIES INC.

15 Exchange Place Jersey City 2, N. J.

10 Minute Glue Cuts Costs
SPEEDS PRODUCTION

Glued with Colpres 10, hardwood or softwood parts are ready for machining in
ONLY 10 MINUTES

A quick setting, two part urea resin adhesive that sets at room temperature, Colpres 10 is water-resistant, non-staining, and unsurpassed for strength and its cold, quick setting characteristics.

HAVE YOU TRIED COLPRES 10?

Get your FREE sample, with full instructions, by sending us this ad clipped to your letterhead.

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TIMBER ENGINEERING CO.
1319 18th ST., N.W., WASHINGTON 6, D. C.

14,000-Acre Timber Tract Plus 5-Mile Lake and Camp

Located in Franklin Co., New York, 1,548 ft. high in the Adirondacks, this 14,000-acre property with private lake 5 miles long and 30,000,000 feet of hardwood developing, offers unusual opportunities to the organization seeking a long-range return on original investment. Present buildings include 21-room main building, 10-room lodge, 5-room gatehouse, 4-room cottage, two garages, boathouse, supplementary buildings. 50 excellent sites around lake for expansion as needed. Unexcelled hunting and fishing have never been open to public. Property is offered — on convenient terms — completely furnished, including 2 Chris-crafts. Get the full details. Ask your broker or us for illustrated brochure WW-43573.

PREVIEWS INC.
*The National Real Estate Clearing House*
NEW YORK 22 — 49 E. 53rd St. • PHILADELPHIA 2—1518 Walnut St. • BOSTON 9 — 20 Kilby St. • PALM BEACH — 270 S. County Rd. • CHICAGO 4—231 S. LaSalle St. • SAN FRANCISCO 4 — 68 Post St. LOS ANGELES 17 — 900 Wilshire Blvd.

## NAMES . . . EVENTS

*(Continued from page 77)*

The AL CLEMENTS LUMBER CO. of Eugene, Oreg., is completing a new 8,000 sq. ft. cut-up room for the manufacture of Douglas Fir Clears.

THE CELCURE WOOD PRESERVING CORP. of Louisiana has opened a new plant in Kenner, La.

THE CENTER WOOD PRODUCTS COMPANY, Center, Tex., is expanding their operations to include a rough mill, finish mill, set of dry kilns and other improvements.

ILLINOIS COOPERAGE MANUFACTURING CO. general offices have been moved from Chicago to Blue Island, Ill.

### *Deaths*

JOHN C. MCGOWAN, 84, an officer in the W. T. SMITH LUMBER CO., and known as one of the pioneer lumber manufacturers of the South, died in Chapman, Ala. recently.

*(Continued on page 89)*

All Northern Hardwoods
Lumber
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NORTHERN HARDWOOD VENEERS, Inc.
Butternut • Wisconsin

Save Time With Our Fine Oak Dimension Stock

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- FLAT
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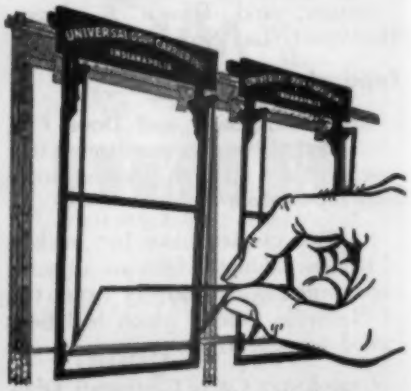
Furniture manufacturers make savings when they use Memphis Hardwood Flooring Co.'s semi-finished dimension stock. No time wasted means lower costs and better profits.

*Send us your specifications for quotations*

Chickasaw Brand Oak Flooring
Pre-finished and unfinished
Treads—Risers—Thresholds

MEMPHIS
HARDWOOD FLOORING CO.
*Since 1905*
1591 Thomas St. • Memphis, Tenn.

Handle Dry Kiln Doors
SINGLE-HANDED?



You can do it with
The Universal DOOR CARRIER

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

*Write for further facts!*

Universal DOOR CARRIER, INC.
1117 Cornell Avenue
Indianapolis 2, Ind.

# NEW

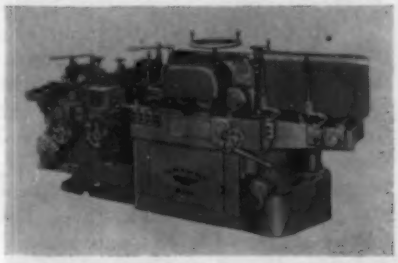
***Products . . . . processes***
***equipment . . . . methods***
***materials & developments***

### 96-Ton Panel Press

What is said to be one of the world's largest panel presses was premiered in Perstorp, Sweden recently. Designed and built by the Fjellman Engineering Works in Mariestad, Sweden, of which Fjellman & Winther Company, Dept. W, Joliet, Ill., is the United States sales distributor, the huge new press has fantastic capacity.

Its pressure is three times greater than the heaviest ever used for similar production. Every two hour cycle of this 96 ton giant produces 100 sheets of a 406 square yard area. As a literal example of the vast pressure which can be applied by the press, its lift is equal to the weight of the entire population of a city of 70,000 or approximately 6,500,000 pounds.

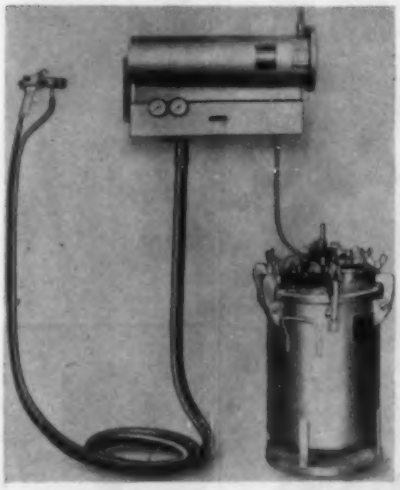
This press is the largest of its kind in Europe, and the Skanska Attikafbriken for which it was manufactured, will use it to produce the famous Perstorp plastic sheets.



### Moulder With Hopper Feed

Dependable Machine Company of Dept. W, Greensboro, N. C., announces the development of a Random Length Hopper Feed for use with the three models of Electro-Unit Drive Moulders manufactured by the company.

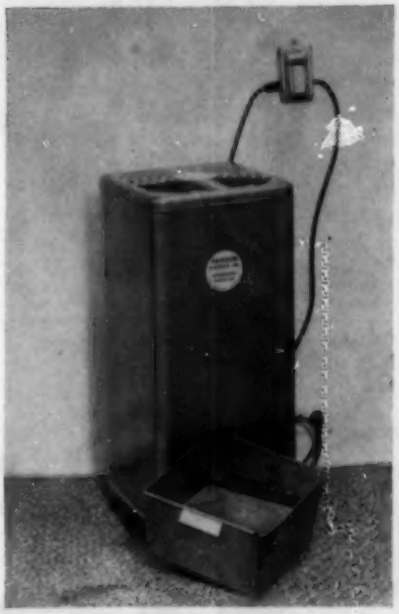
The Dependable Hopper is designed to take short, long, thick, thin, narrow, and wide stock with equal ease of feed. This unit has been made very compact in order to take very short stock, feed easily, take less floor space, and be in conformity with the compact design of the moulders. The hopper has a capacity of stock up to 48" long and up to the standard width of the moulder. Longer stock can be fed by hand in the conventional way.



### Pumpless Hot Spray Unit

The superior finishes obtainable by hot spray painting and the proven economies associated with the process, which utilizes heat as a viscosity reducing agent, are now available to a wide range of industries through the introduction of an improved unit which eliminates paint circulating pumps and other moving mechanical parts. The device, which can be used with any standard paint spray system, is being placed on the market by Special Equipment Corporation, Dept. W, 225 Lafayette Street, New York 12, N. Y.

Called "Therm-O-Spray", it is based on the principle that the ideal method of applying hot coatings is to heat a small quantity of paint for a short period of time under constant temperature and pressure just before spraying. This is accomplished by "Therm-O-Spray without the use of complicated circulating pumps or any other troublesome mechanical contrivance.

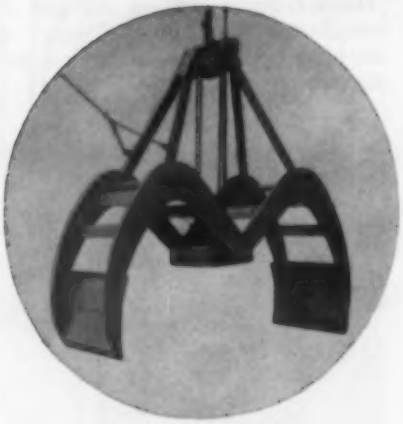


### New Dehumidifier

The Abbeon Supply Co., Dept. W, 179-15 Jamaica Ave., Jamaica 32, N. Y., announces that the new Abbeon Dehumidifier, Model WA-5 is now coming off the production lines after extensive laboratory and field tests. It is claimed that more and more manufacturers and home owners are vitally concerned with the problems caused by too high a humidity. It is also claimed that such problems as mold, rust, mildew, dripping pipes, wet walls, warping and other problems caused by high humidity can be effectively prevented or cured through the use of this new dehumidifier.

### Chem-Dry Process

The Meyercord Co., Chicago, Illinois, has designated H. L. Barnebey, P. O. Box 144, Dept. W. Pittsburgh 30, Pa., as exclusive licensing agent for its Chem-Dry process for hardening inks, paints, and varnishes. By this technique, protective and decorative coatings on paper, cloth, metal, wood, glass, and plastics are hardened in a few seconds. Heavy coatings can be applied and the coated material can be stacked or packaged directly from the machine. The Chem-Dry process has been suggested for a wide variety of interesting applications including the manufacture of oil cloth, linoleum, finishing of furniture and appliances, license plates, and many types of printing applications.



### All-Steel Welded Grapple

A new all steel welded grapple, designed to facilitate loading of pulpwood, railroad ties, and similar materials with the 5-ton capacity truck-mounted Bantam crane, has been announced by Schield Bantam Co., Dept. W, Waverly, Iowa. Rated at ¼-cord capacity (100″ wood), the new Bantam grapple has a tong opening of 5′3″ with a gross weight of just 1155 lbs. Overall length of tong blade is 2′8″, while overall grapple height is 5′2″. Constructed of cold rolled steel shafting and angle irons, with easily lubricated zerk fittings and bronze bushings in sheaves, the unit is said to combine light weight and excellent balance with unusually rugged strength and fast, easy operation.

### Hand-Size Chain Saw

A new hand-size chain saw, designed for faster, easier and safer tree limbing and topping, has been developed by the Mall Tool Co. This lightweight Model 11E18 Electric Hand Chain Saw can be used to supplement gas engine chain saws on trimming operations. It can be carried or hoisted into the tree and used with one hand, leaving the other free for support. The 18 inch cutting bar also makes it practical for felling.

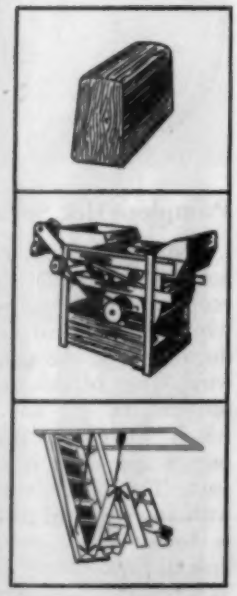
Features a new type narrow kerf chain for quicker, cleaner cuts in all varieties of wood, and is simple to set and sharpen. It is powered by a universal motor for standard 115 volt AC-DC current or portable generator. For full details write Mall Tool Co., Dept W, 7725 South Chicago Ave., Chicago 19, Ill.

### Stripper for Glue Spreaders

Black Brothers Spreaders can now be equipped with a positive arrangement for stripping cross-banding from the applicator rolls when passing through with grain parallel to the roll shafts. The extra rigid fingers are arranged with a micrometer adjustment and positive stop to limit travel. The fingers are broad to eliminate resilient roll damage and designed to remove 1/20″ stock from the roll surface with ease. Additional information is available from The Black Bros. Co., Inc., Dept. W, Mendota, Illinois.

**WEYERHAEUSER SUPPLIES WOOD PARTS...**

**FOR A WIDE VARIETY OF PRODUCT FABRICATIONS**



PARTIAL or complete fabrication of wood parts is one of the services offered by Weyerhaeuser. Blanks of Western softwoods are cut to size for assembly and finishing in manufacturers' plants. Many, however, find it more economical to have Weyerhaeuser handle certain of the moulding operations.

Here is a service that offers attractive economies . . . avoidance of waste . . . saving in freight . . . saving factory floor space . . . speeding assembly . . . reducing inventory through rapid turnover.

Weyerhaeuser's large scale facilities permit mass production for lower costs as well as product uniformity. An inquiry listing detailed specifications will bring you complete information as to how we can serve you in the direction of efficiency and economy.

**Weyerhaeuser Sales Company**

*Industrial Wood Parts Department*

Room 2135 — 400 West Madison Street — Chicago 6, Illinois

### Yard Crawler Crane

The American Hoist & Derrick Co., Dept. W, 63 S. Robert, St. Paul, Minn., announces a completely new ¾ Yard Crawler Crane—available with a choice of fronts—crane, shovel, dragline or pull shovel. This new machine reflects the experience gained from almost three-quarters of a century of building excavating machinery. The Model 375BC, as the new unit is called, follows the same basic "American design" used in their huge 80 ton capacity locomotive crane and 100 ton revolving crane in that the machinery platform is an integral rolled steel electrically welded unit, rather than the conventional cast center with bolted-on walkways. It definitely falls in the heavy duty 45,000 pound class. Track pads are double walled, special steel castings with full length pins. The steel used is a special development that reduces abrasive wear to a minimum, yet withstands the shock and strain of rough travel without breakage.

### Ten and Twelve-inch Speedmoulders

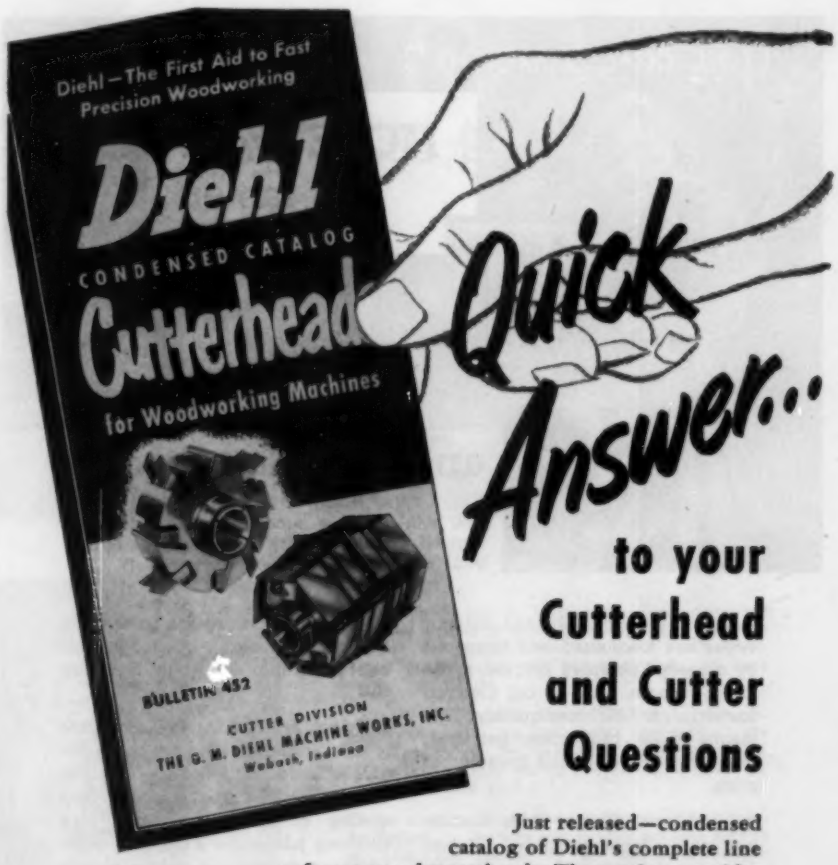
Timesavers, Inc. 549 W. Washington St., Chicago 6, Ill., announces the new improved Models 10X and 12X in their Timesaver Speedmoulder line. Now, in these models each spindle is driven by a separate motor with the power stepped up to over 40 H.P. and a new and stronger outfeed assembly has been provided, it is claimed. These machines will run mouldings up to the full capacity of the machine and also surface four sides of lumber up to 4 x 12".

Easy set-up features of the standard models are incorporated in these new improved machines, such as Bridge type pressure bar supports to assure equal pressure across a 12" wide board. It is claimed that this feature guarantees perfect sizing and a smooth finish on all work.

### New Wood Filler

F. J. Dolan & Company, Inc., Dept. W, 1830-32 N. Laramie Ave., Chicago, 39, Ill. manufacturers of industrial finishes, announce their newest development in a Wood Filler, under the name of Tintone.

It is claimed that Tintone Fillers produce the clearest, cleanest colors ever developed, and eliminate completely greying, spotting and hazing. They also provide greatly improved pore filling and reduced pin holeing, puffing, shrinking, etc. Available in light, medium and dark colors for either Mahogany or Walnut.


Quick Answer...

to your Cutterhead and Cutter Questions

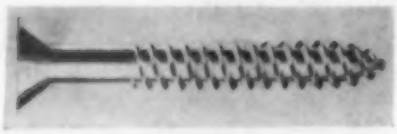
Just released—condensed catalog of Diehl's complete line of cutters and cutterheads. The catalog provides a handy reference of the latest data on stock heads and cutters and engineered-to-your-problem heads and cutters. Send *now* for this illustrated, informative, quick-reference booklet.

Write to The G. M. Diehl Machine Works, Inc., Wabash, Indiana, for Bulletin No. 452.

CUTTER DIVISION THE G. M. Diehl MACHINE WORKS, INC.

On the Banks of the Wabash

WABASH, INDIANA • U.S.A.



### New Wood Screw

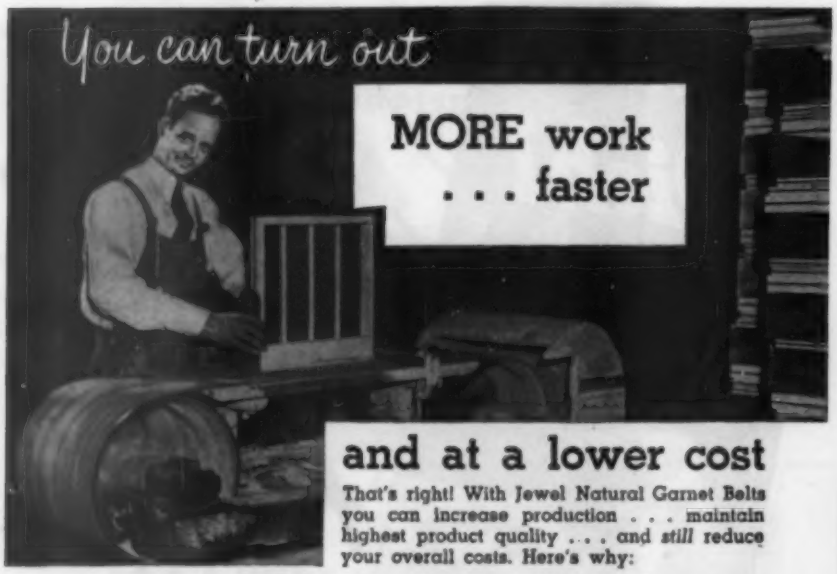
The new Twinfast wood screw which has two threads with twice the pitch and drives twice as fast as a conventional wood screw, is now being produced by the Townsend Company, Dept. W, New Brighton, Pa.

The driving speed of the Twinfast Screw is demonstrated by the fact that a No. 10 screw with 30 threads is seated in 15 turns of the driver; while a standard No. 10 screw, which also has 30 threads, will require 30 turns for complete seating.

### Convert Powersaw into Fire Engine

Foresters at Weyerhaeuser Timber Company's Springfield, Ore. branch can turn an ordinary powersaw into a portable fire engine in 90 seconds. The gasoline-powered saws that fall and buck timber on company logging operations may now be used to pump water on a forest fire. They will draw the water from streams, lakes or ponds in the woods.

With attachments developed by the foresters, standard auxiliary fire-engine pumps may be coupled to powersaw motors. It takes only a minute and a half to remove a saw from its motor and attach the fire pump.


**and at a lower cost**

That's right! With Jewel Natural Garnet Belts you can increase production . . . maintain highest product quality . . . and *still* reduce your overall costs. Here's why:

1. Jewel Natural Garnet cutting edges are toughened and tempered by a special patented process, made to last longer . . . to cut cleaner, faster . . . to "fill" less quickly. This means more production per belt, fewer replacements and lower labor costs.

2. All Jewel Garnet Belts feature exclusive, longer-wearing "Velvet Joints" that eliminate bumpy, uneven belt travel. This means fewer rejects . . . clean, satin-smooth finishes on *all* your products . . . better overall belt performance day in and day out.

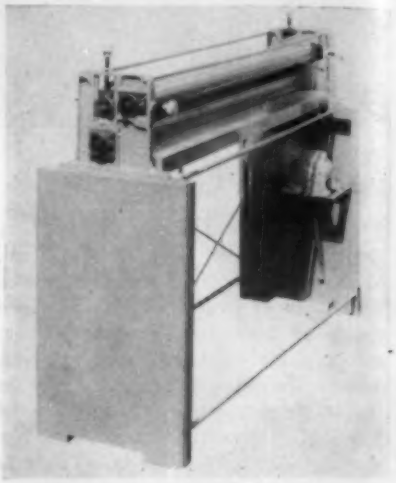
3. Jewel Brand Belts are available in a full range of sizes for both portable and large stationary sanders. This means that you can stock top quality abrasive belts for every finishing job in the shop . . . order from one dependable source of supply . . . save time, save money.

Ask your distributor for complete information on Jewel Natural Garnet Belts today — or write direct. Abrasive Products, Inc., 553 Pearl St., South Braintree 85, Massachusetts.

**SHARPER, TOUGHER**

**Jewel Brand COATED Abrasives**

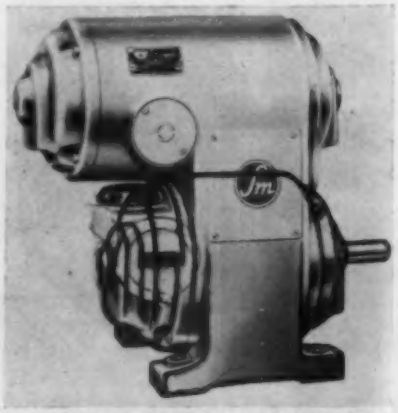
**CUT COSTS!**

### Combination Glue Spreader and Coater

A new item in roller coating equipment that is said to be particularly adaptable to the woodworking trades is the Walco Coater and Glue Spreader. This machine applies adhesives, paints, lacquers, etc., to plywood, Masonite, Formica, Fiberboard and many other flat surfaced materials.

It coats materials 50 inches in width and 1⅛ inch thick. It is available in two types, C-1 and D-2, for coating one or both sides. For complete information, write L. R. Wallace & Co., Dept. W, 440 Seaton St., Los Angeles 13, Cal.



### Variable Speed Drive Mounting

A variable speed drive with mounting dimensions that are interchangeable with NEMA standard motors has been announced by Sterling Electric Motors, Inc., Dept. W, 5401 Anaheim,

Telegraph Road, Los Angeles, 22, Cal. This new drive consists of a variable speed transmission with positively adjusted pulleys and an induction motor built in a single, compact unit. This new variable speed drive is designed to save machinery manufacturers the cost of building special bases where interchangeability between variable speed drives and NEMA standard motors is required.

## NEW LITERATURE

### Film Features Plant Maintenance

How a number of the country's leading-industrial plants have effected new efficiencies and marked economies by employing fork-lift trucks and towing tractors in plant maintenance operations, is shown dramatically in a new 15-minute motion picture, "Serves You Right!", just released by the Clark Equipment Company, Dept. W, Battle Creek, Michigan.

This new movie, which is in black and white, with sound, also features the use of industrial radio in the operation of a fork-truck fleet working in both plant maintenance and materials-handling activities. Many of the sequences show ingenious employment of the fork truck in plant maintenance work, and contribute largely to the film's thought-provoking qualities.

### New Red Book Just Published

Just off the press is the May 1952 Edition of the authoritative Red Book. Thousands of important credit rating and business changes are reflected in this, the 141st issue of the Reference Book of the Lumbermen's National Red Book Service.

The Lumbermen's National Red Book Service is published by Lumbermen's Credit Association, Inc., Dept. W, 608 South Dearborn Street, Chicago 5, Illinois.

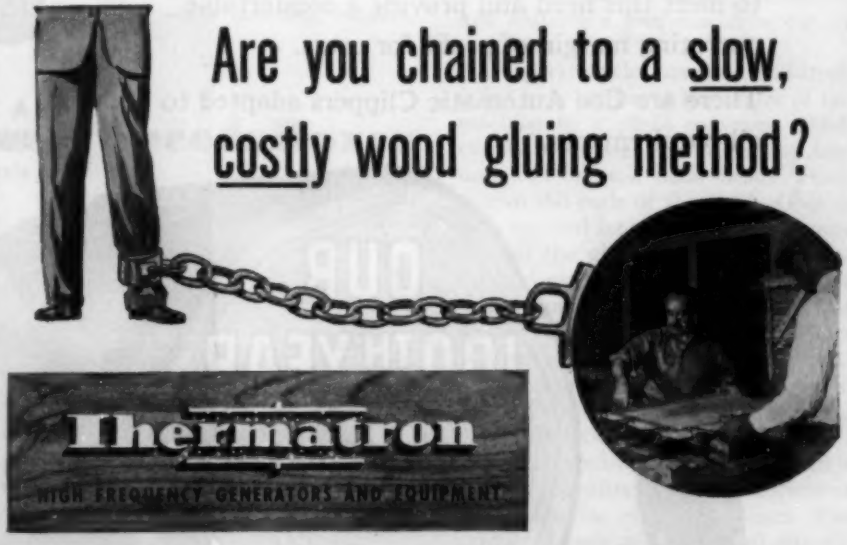
### How to Store Coated Abrasives

A new booklet explaining the best way to store coated abrasives in order to prevent deterioration and improve length of service has just been published by Armour and Company, Coated Abrasives Division, Dept. W, Alliance, Ohio.

Since many plants always have large supplies of abrasive belts and discs in their storerooms, this information should be of great interest. Proper storage of abrasives not only reduces deterioration, the booklet explains, but also considerably increases the length of service of any belt or disc.

Because of demand for workable specifications for wood treatment in the general construction field, The Dow Chemical Company, Dept. W, Midland, Mich., is making available upon request copies of its internal specifications on the use of pentachlorophenol to protect wood against rot and insects.

The specifications will be a guide to enable builders to specify the proper type of "penta" treatment for building lumber and will be useful to architects, engineers and construction firms of all types.


*. . . For Permanent Wood Bonding in a Matter of Seconds!*

Seen in the jig is an entire cabinet assembly to be glue-set electronically by THERMATRON in only 30 seconds. The bond is stronger than the wood itself by actual test! Hidden in the background is the 3 KW generator which masterminds this job.

The saving to you in time, labor, floor space and expensive veneers is immeasurable . . . And the bonds produced are stronger than the wood itself. Costly clamps and clamping time are eliminated, and there are far less rejects.

THERMATRON supplies the complete installation, including generators and jigs, under one contract and one responsibility. The immediate production savings THERMATRON brings you are often more than the initial installation cost.

Write us today for complete details about your bonding problem . . . We'll be glad to offer guidance without obligation. And ask us for our instructive bulletin No. 47-O

**HIGH FREQUENCY GENERATORS AND EQUIPMENT FOR ELECTRONIC GLUE DRYING • BENDING • EDGE GLUING • VENEER BONDING**

Standard stock generators available from 500 Watt to 20 KW output, operating on 110 or 220 volt lines. Larger size generators up to 100 KW can be supplied for larger requirements.

*T. M. Reg. U. S. Pat. Off.

Thermatron* equipment
RADIO RECEPTOR COMPANY, Inc.
Since 1922 in Radio and Electronics
Sales Dept. 251 W. 19th St. New York 11, N. Y. • Factory: 84 N. 9th St. Brooklyn 11, N. Y.

# Automatic Veneer Clippers

## DEVELOPED AND REFINED BY COE ...

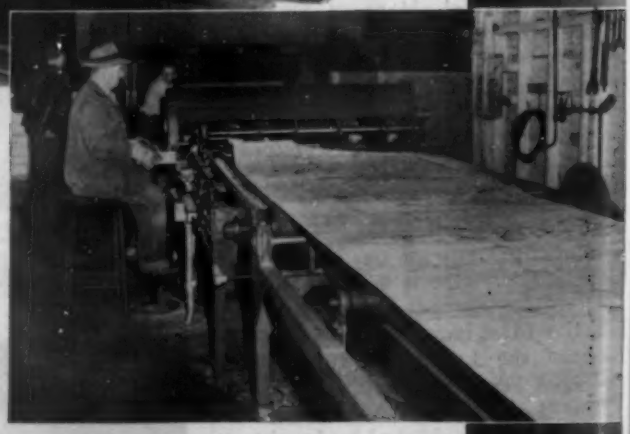
## *Throughout The Years!*

With the increased need for veneer the demand has mounted steadily, requiring faster, more efficient methods of production.

Coe Clippers have been designed to meet this need and provide a comfortable operating margin of profit for users.

There are Coe Automatic Clippers adapted to all requirements.

A Model 330 Multi-knife Automatic Panel Clipper which cuts o[ff] flaws and sizes veneer in motion up [to] 175 feet per minute.

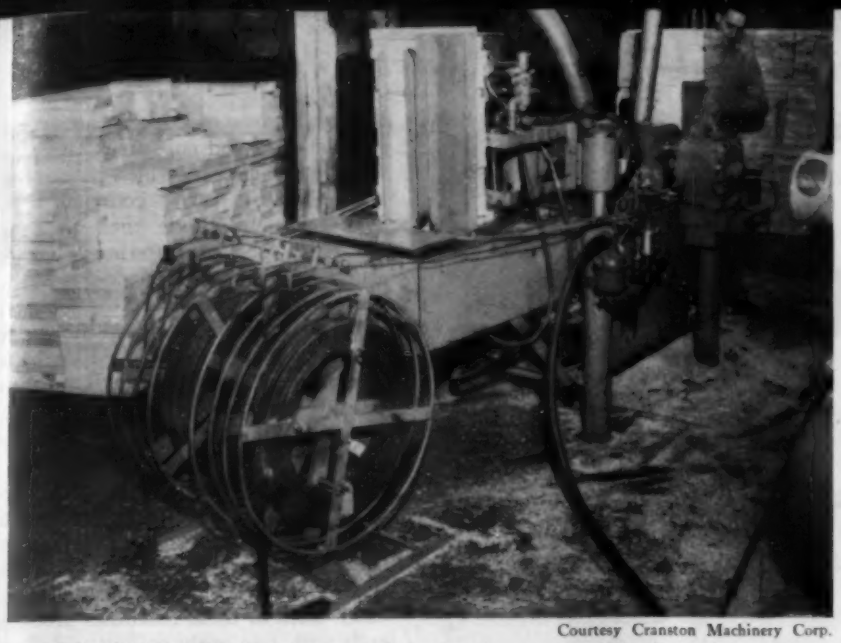


The Model 346 CLIPPER which meets the need for a single-knife high production machine.

THE COE MANUFACTURING COMPANY
PAINESVILLE, OHIO

316 BANK ST.

LATHES • CLIPPERS • DRYERS • KNIFE GRINDERS



Courtesy Cranston Machinery Corp.

**AUTOMATIC MACHINE is hopper fed—it trims ends while fastening random widths.**

**A Barrel Box and Package Feature Story**

★

# Automatic Machinery Speeds Boxes

## Modern equipment combines operations in manufacturer of box ends-multiplies production many fold.

**by Paul Graham**

The various automatic machines which have been developed for production of sound, strong multiple piece box ends from solid wood waste and random width trimmings now provide means for full utilization of box lumber. These machines have also increased box end production to a point where 60 or more double thickness ends or 130 single piece ends may be automatically produced per minute in a controlled sequence of manufacture and fabrication.

Automatic corrugated fastener machines with mechanical feeding devices are a natural development of the foot-operated hand-feed stapling machines used to build up multiple piece ends and to reinforce cracks in one piece ends. In the conveyor-feed machines end pieces are loaded onto a conveyor and traveled to multiple driving heads arranged to drive the required number of fasteners at one stroke, cutting off and driving fasteners that are wound in single or bulk rolls at the machine. These heads are usually cam-actuated to make the skips required to form the individual multiple piece end sections.

A typical hopper-feed corrugated fastener machine operates with automatic action after box end blocks have been placed in the feed hopper. From the hopper the stock is picked up by conveyor chain carrier and fed under a pneumatic driving mechanism. Six pneumatic driving heads, three on the bottom and three on the top, are used to drive fasteners fed from reels at the rear of the machine and a crack finding device centers the cracks automatically between top and bottom driving heads. This permits random widths down to 1⅛ inches to be hopper-fed into the machine. Any of the heads may be disengaged by simply turning a valve and a wide combination of fasteners may be driven within a minimum of set-up time.

After the fastening process, the ends pass on to an equalizing table where they are automatically trimmed for length and are fed into an automatic stacker in the tail of the machine. One man can operate this machine at a production rate of about 30 double thickness box ends per minute. Changing over the set-up seldom takes more than 5 minutes for any size within the capacity of the machine.

Various automatic splined end machines have been engineered and built in different box plants and improvements have been made to meet production problems of the individual plant as required. One of these machines is currently in use at the box plant of the Fruit Growers Supply Co., Westwood, Calif. to automatically groove box end stock and insert by pressure pine splines (5/16-inch by ½-inch by 11⅛ inches) into multiple piece ends built up from two or more pieces. The machine is fully automatic and requires a four-man crew for its operation.

In operating this machine, end stock is fed by a hopper at the center of the machine to a chain conveyor which carries it through an equalizing saw unit and on past dado heads which groove the ends of the stock. Glue is then sprayed into the grooves. Clamps beyond the glue applicators stop the forward motion of the end pieces and hold them tightly together while splines are applied to the grooves by a pusher arm assembly, driving two splines from each side at the same time. Directly beyond the splining mechanism two edges of the splined ends are trued by parallel saws and a second equalizer saw arrangement then trues the other two edges. The equalized ends are finally fed directly to a band resaw to be cut into single thickness ends.

The feeding and operation of this machine keeps four men busy. One operator feeds end blocks into the center feed hopper, one feeds splines into a pair of opposite feed hoppers for driving, one offbears the band resaw, and the fourth man keeps up the glue supply and attends to machine pressures and general machine maintenance. This machine handles end stock up to 6/4-inch thickness and has a normal working capacity of about 130 single thickness splined multiple piece ends per minute, although it is said it can be operated much faster. A somewhat similar machine now in use at the Fresno, Calif. plant of the General Box Distributors, was developed by C. A. Burkholder of that organization.

Another unique and very efficient type of automatic splined end machine was designed and developed by W. C. Strong, retired superintendent of Weyerhaeuser Timber Company's

*(Continued on page 86)*

## Speeds Boxes

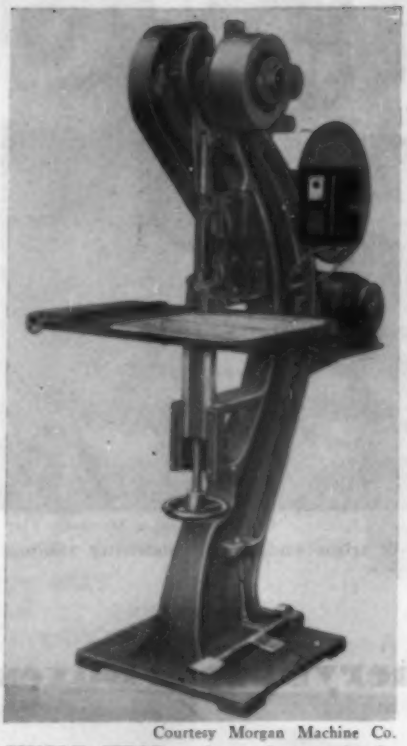
*(Continued from page 85)*

Klamath Falls, Oregon box plant. This fast automatic machine glues rail members to a core stock body by a tongue and groove joint to produce multiple piece box ends at an average rate of 50 to 60 double thickness ends with a four man operating crew.

End rails and core stock are first cut up at conventional saw tables and laid up to feed into the hoppers. From the hoppers conveyor chains feed the rails to parallel troughs which overpass to permit two lines of rails to be laid in parallel alignment on opposite sides of the core stock before they are squeezed together to form the complete end. Several operations are done, however, before this assembly takes place.

Core stock from its hopper (2 or 3 pieces per end) is first passed between equalizing saws and on by a pair of glue joint cutter-heads which groove the ends of each piece to receive the tongues of the rails. Before the core stock is moved on to the central hopper for assembly, the grooves are sprayed with glue through opposed glue applicator nozzles which project part way into the grooves.

Meanwhile rails are fed from the



Courtesy Morgan Machine Co.

**SINGLE HEAD splicer for multiple piece box ends.**

hopper to be cut for tongues by another pair of glue joint cutterheads and pushed over the parallel troughs to join the core stock in the central hopper. A conveyor then moves the complete rail and core stock layup on to a toggle squeezer which presses the assembly parts into a complete unit. The completed ends then progress through a pair of cutterheads which round both ends with a double V-cut for resawing and the ends are stamped with the patent number and the words "Strong Shook End". Picked up by a transverse conveyor, the ends are then passed through equalizing saw for finished dimensioning and are unloaded for removal to the resaw.

A somewhat similar spline end machine being used in several California box plants, was developed by Henry Goff and was first used at the Stockton Box Company Plant in Stockton, Calif. Both of these machines produce ends with side grain nailing and eliminate nail pulling tendencies from nails driven into end grain as may be the case in ends assembled with corrugated fasteners. The holding action of nails driven through the side of the box and into the spline also serves to lock the spline securely in place.

Another excellent hopper-feed spline end machine is manufactured by the Cranston Machinery Company of Oak Grove, Oregon. This machine was de-

*(Continued on page 87)*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**ST. JOE MACHINES, INC.**

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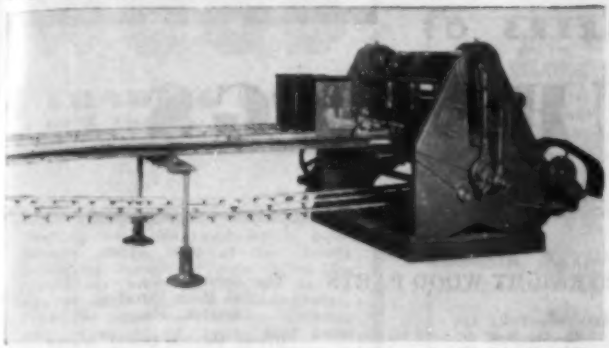
**Box Ends**—*(Continued from page 86)*



Courtesy St. Joe Machines, Inc.

**CONVEYOR FEED corrugated fastening machine.**

veloped for multiple piece box end production only a few years ago. One of these machines, one of the first to be installed, is producing up to 100 multiple piece ends (50 double thickness ends) per minute at the Greenville, Calif. box plant of the Setzer Forest Products, Inc., automatically ripping and trimming the ends in the same operation, with machine capacity for ends of 8½ inches by 10⅞ inches up to 14¾ inches by 16⅝ inches in size.

This same machinery concern has also developed a very efficient supplementary machine which permits utilization of waste stock as short as 4 inches and down to 3 inches in width. Using a unique interlocking tongue and groove arrangement for butt jointing, small blocks of wood are hopper-fed into the machine where they are automatically cut to length and cut for width as required. Moving along a conveyor, they are tongued and grooved by special cutter-heads, glue is applied to the joints and they are automatically squeezed together to form built-up sections, with a clamping period provided long enough to set the glue. These salvaged wood sections may then be processed along with regular box end stock through either corrugated fastener or spline end machines to make up multiple box ends.

Many box plants also use the Linderman machine to assemble multiple piece ends automatically in single and multiple lengths and in single and double thickness (usually the latter) for production of large quantity lots. In a typical fabrication operation 1-9/16-inch thickness ends are built up by the Linderman process, using short core stock from the cut-off saw between edging waste, into panel assemblies about 52 inches long.

These panels are passed through a multiple rip saw arrangement as they emerge from the Linderman machine to be cut into four sections and are then turned on the conveyor to be passed between a pair of equalizing saws for finished dimensioning. The dimensioned ends are then carried on through a planer to surface both sides and are resawed to produce eight complete piece ends from each panel.

All of these automatic multiple piece end machines make possible profitable salvage of all types of offal, short stock, scrap cuts and edge knot pieces which were formerly burned. Their operation and application also permit the use of less costly wood species without any danger of the material cupping or splitting after the ends have been assembled. This applies particularly to the end spline method of construction. The Wooden Box Institute of San Francisco, Calif. has estimated that a study of all charges incurred by extra handling of sometimes required and estimated operating costs show that the value of salvage material used in the manufacture of these multiple piece ends may well be as much as $80 per 1,000 board feet. END.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*(Continued from page 78)*

WILMOT T. PRITCHARD, 65, President and General Manager of the STETSON-ROSS MACHINE CO., Seattle, Wash., died suddenly April 19, 1952.

In the April, 1952 issue of WOOD & WOOD PRODUCTS we profiled Mr. Pritchard for his many years of service and outstanding contribution to the

**Wilmot T. Pritchard**

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WILLIAM STUART FOSHEE, 53, prominent Montgomery lumberman, died in Montgomery, Ala., April 17, 1952.

W. T. MURRAY, 77, prominent for more than half a century in southern lumber manufacturing, and a leader in the standardization program of Southern Pine lumber grades, died May 2, 1952.

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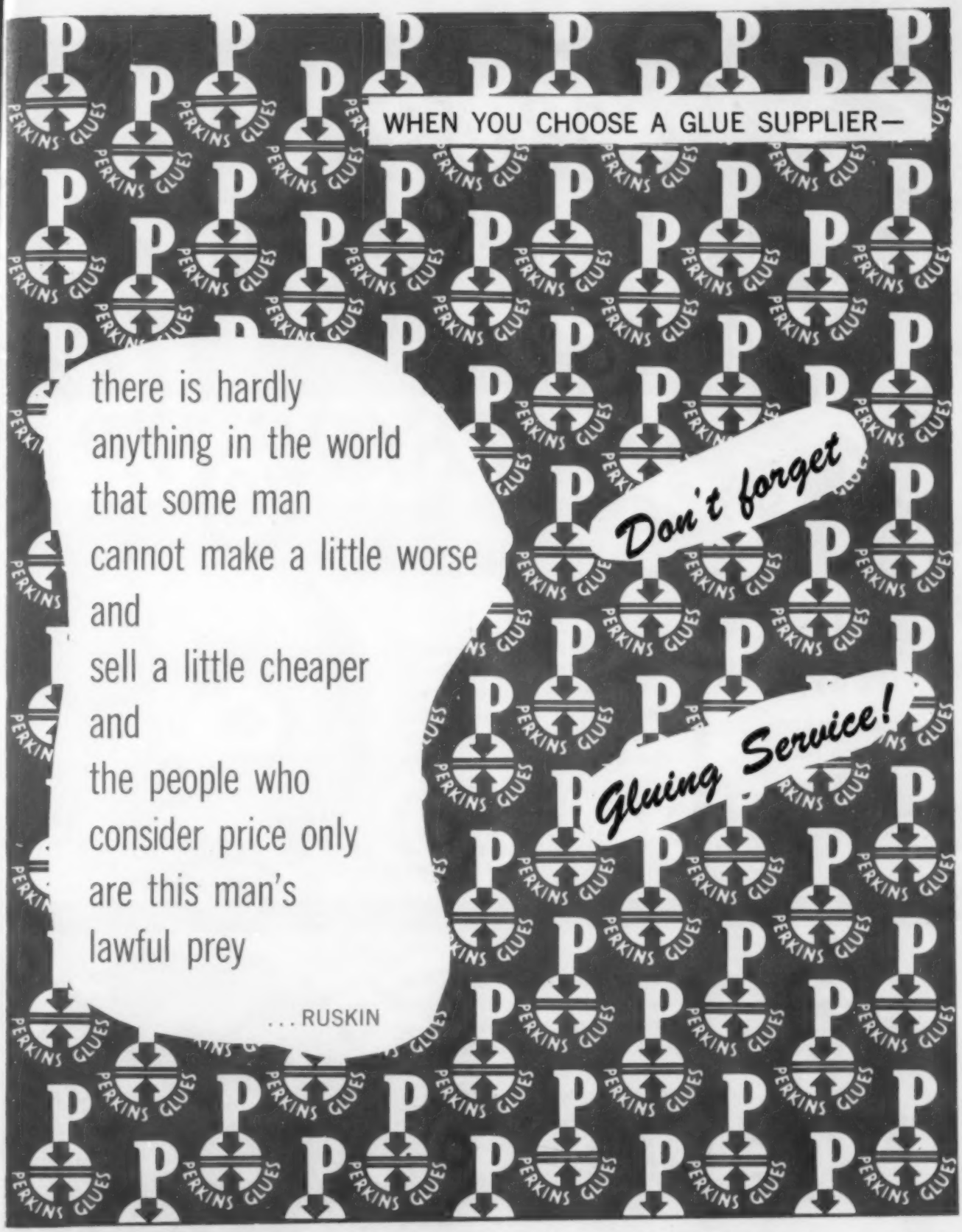


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